



Franklin County Regional Transportation Plan 2016



Providing a vision for the county's transportation systems in a context that is suitable for the rural nature of the region.

2016 Franklin County Regional Transportation Plan

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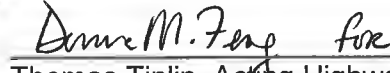
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2016 Franklin County Regional Transportation Plan


Franklin County Transportation Planning Organization Committee of Signatories Endorsement of the 2016 Regional Transportation Plan


Stephanie Pollack, Secretary and CEO
MassDOT

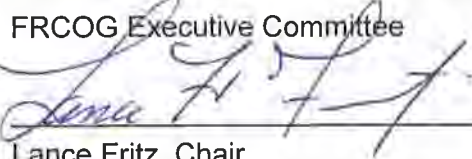

Date


Thomas Tinlin, Acting Highway Administrator
MassDOT Highway Division


Date


Bill Perlman, Chair
FRCOG Executive Committee



Date


Lance Fritz, Chair
Franklin Regional Transit Authority



Date


William Martin, Mayor
City of Greenfield



Date


John Paciorek
Regionally Elected Representative to the FRCOG
Executive Committee


Date


Robert Dean
West County Sub-Regional Appointment


Date


Jonathan Edwards
Central County Sub-Regional Appointment


Date


Vacant
East County Sub-Regional Appointment


Date

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Introduction



2016 Regional Transportation Plan

1 Introduction

Franklin County is the most rural county in the Commonwealth and as a result, transportation planning and its implementation pose interesting challenges. Its sparse population and large geographical area naturally constrain many modes of travel beyond that of the private automobile. The large area that the transportation network covers also makes it difficult to efficiently provide improvements. In spite of these obstacles, Franklin County has had a very successful track record in maintaining, improving, and preserving its transportation system. The Franklin County Regional Transportation Plan, which is updated every four years, helps to provide a clear vision of the county and prioritizes its needs in a context that is suitable for the rural nature of the region.

This Regional Transportation Plan (RTP) update focuses on the importance of providing safe, efficient mobility for residents, while taking into account the rural character of the county. The RTP specifically emphasizes the following goals: preservation and improvement of the existing transportation system, while also maintaining the region's scenic and natural resources; providing residents healthy transportation options to the singly-occupied vehicle; strengthening the local economy and industries; and improving the region's livability and sustainability.

As in years past, safety is a major focus for this update to the RTP. The safety of the regional transportation system has been and will continue to be a high priority when evaluating and setting the agenda for regional transportation projects and activities. For this reason, projects that will make the existing system safer, more efficient, more secure and better able to support the goals of this RTP are prioritized in the region rather than those that will create new roads or add capacity to the region's roadways.

Through the completion of this Regional Transportation Plan update, the accompanying public participation process, and other planning work conducted by the Franklin Regional Council of Governments (FRCOG), it is clear that there is a very strong interest in expanding the transportation system to include additional healthy transportation options to the singly-occupied vehicle.

Specifically, there is a very strong demand for expanded public transit services either through the establishment of new routes to unserved areas of the region, or the initiation of additional service runs on existing routes. This has been strongly vocalized through the public outreach conducted in partnership with the Franklin Regional Transit Authority (FRTA)

for the FRTA's Comprehensive Service Analysis. The on-going expansion of the Franklin County Bikeway has prompted increased interest in bicycling as a healthy transportation option. Additionally, the establishment of new park-and-ride facilities throughout the county and the return of passenger rail services to the region has further heightened interest in other modes of transportation.

During the development of the 2016 Regional Transportation Plan, a particular emphasis was placed on public participation and outreach. Chapter 2 details the public participation process that was undertaken during the creation of this update. The Franklin County Transportation Planning Organization (TPO) recognizes that there are finite financial resources available to advance the recommendations of this report. Therefore, in order to ensure that the recommendations are realistic, a financial component has been included as part of this plan.

The Franklin Regional Council of Governments

The Franklin Regional Council of Governments (referred to as the FRCOG) serves the towns of the Franklin County region in western Massachusetts. The FRCOG integrates regional and local planning, human service advocacy and coordination, and the provision of municipal services such as cooperative purchasing and building inspection to advance the following regional goals:

- Balancing economic development with the protection of natural and cultural resources, and with the rural character and heritage of the region;
- Ensuring the most economical creation and delivery of public services in a rural region comprised of many political subdivisions; Building healthier communities by developing and connecting broad-based coalitions, which raise the level of expectations for community achievement.



The Franklin Regional Council of Governments offices

The FRCOG advocates on behalf of its member communities at the state and federal level to ensure that funding, programs, and policies are sensitive and respond to the rural nature, economic strengths, and human and natural resources of the region.

Additionally, the Franklin Regional Council of Governments serves as one of the Commonwealth of Massachusetts' thirteen (13) Regional Planning Agencies and Metropolitan Planning Organizations (MPO). An MPO consists of a Committee of Signatories, who together makes decisions about transportation planning goals, projects, priorities, and funding. In Franklin County, this group is referred to as the Franklin County Transportation Planning Organization (TPO). In its role as a TPO member, the FRCOG follows federal transportation planning regulations, including the establishment of a citizen advisory group to participate in transportation planning activities. The FRCOG staff is responsible for coordinating and working with the other TPO members to develop, implement, and routinely update the Regional Transportation Plan for Franklin County, as well as provide a wide range of other planning services.

The Franklin County TPO is governed by a Memorandum of Understanding (MOU) that was executed in 2006 and updated in 2010. As defined by the MOU, the TPO's committee membership contains nine members including the following representatives:

- The Secretary of the Massachusetts Department of Transportation (MassDOT) (to act as the Chair of the FCTPO);
- The Administrator of the Highway Division of MassDOT;
- The Chair of the Franklin Regional Council of Governments Executive Committee;
- The Chair of the Franklin Regional Transit Authority;
- The Franklin Regional Council of Governments Regionally Elected Official;
- The Mayor of Greenfield; and
- Three Franklin County Sub-Regional Appointments (one from the West County, one from Central County, and one from the East County sections of Franklin County as defined in the MOU).

The MOU defines that the FCTPO shall have the responsibilities of developing, reviewing, and adopting the region's annual transportation Unified Planning Work Program, the Regional Transportation Plan, the Transportation Improvement Program, and air quality conformity determinations. The MOU further states that the FCTPO shall have the responsibility of meeting all of the provisions of the federal 3C (Continuing, Cooperative, Comprehensive) Transportation Planning Process that may include: the initiation of studies, evaluation and recommendation of transportation improvements, and the programming of funds for transportation projects in the region for which funding is sought for implementation. The MOU also states the FCTPO shall be the forum for cooperative decision-making by officials of local government, regional planning commission, regional transit authority, and state officials representing state transportation agencies.

The MOU defines that the Franklin Regional Planning Board (FRPB) will act as an advisory board to the FCTPO in order to ensure that all transportation decisions are considered within the context of comprehensive regional planning. The composition of the FRPB includes a Select Board and Planning Board member designee from each town as well as 18 at-large members. The FRCOG is, by state designation and consistent with applicable federal transportation laws, the primary transportation planning staff for the FCTPO and also serves as the principal source of transportation planning for local and regional transportation projects.

Moving Ahead for Progress in the 21st Century (MAP-21)

The federal legislation that guides transportation planning (including Regional Transportation Plans) and projects is called Moving Ahead for Progress in the 21st Century (MAP-21). On July 6, 2012, President Obama signed MAP-21 into law as the latest federal transportation legislation, which guarantees funding for highways, highway safety, and public transportation. MAP-21 replaces three previous landmark federal transportation legislations: the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005, the Transportation Equity Act for the 21st Century (TEA-21) enacted in June of 1998, and the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. ISTEA revolutionized the planning and funding of highway and mass transit construction, maintenance, and operations throughout the United States. TEA-21 confirmed the federal government's commitment to establish a nationwide transportation system that reflects the country's environmental, social, and energy goals. SAFETEA-LU further built on the foundation of these two previous acts. MAP-21 transforms the policy and programmatic framework for investments by creating a new, streamlined and performance-based program. It also builds on many of the highway, transit, bike, and pedestrian programs and policies established under the previous transportation legislations.

MAP-21 addresses the many challenges facing our transportation system today, such as improving safety, reducing traffic congestions, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment, as well as laying the groundwork for addressing future challenges. MAP-21 expands the National Highway System to incorporate principal arterials not previously included. It consolidates the overall program structure into a smaller number of broader core programs. It focuses on a multi-modal program that promotes sustainability and economic development.¹ This Regional Transportation Plan was developed within the framework of MAP-21's requirements and focuses on the priorities of this transportation legislation.

¹ United State Department of Transportation, Federal Highway Administration, *A Summary of Highway Provisions in MAP-21*, FHWA website, <http://www.fhwa.dot.gov/map21/summaryinfo.cfm>, 2015.

The Regional Transportation Plan

MAP-21 requires that each MPO complete a regional transportation plan and update it at least every four years. MAP-21 further specifies that:

“...the Plan and TIPs for each metropolitan areas shall provide for the development and integrated management and operation of transportation systems and facilities (including accessible pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the metropolitan planning area and as an integral part of an intermodal transportation system for the State and the United States... The long-range plan must describe the performance measures and targets used in assessing system performance and progress in achieving the performance targets.”

In summary, a Regional Transportation Plan is a planning document that details existing conditions, identifies current deficiencies, and projects future needs related to transportation systems for a particular geographical area. The RTP reviews all types of transportation, including vehicular, rail, air, bus, bicycle, and pedestrian. The RTP is intended to set the vision for the region’s transportation system and is updated at least every four years. The update is an opportunity to review and update transportation priorities within the region. The Regional Transportation Plan is required to forecast the transportation needs of the region for the next twenty-five years (the year 2040 for this plan) and it is required to do so in the context of financial constraint. This Plan also establishes performance measures so that future progress in meeting the region’s goals can be assessed.

The recommendations in the Franklin Regional Transportation Plan provide the framework for transportation projects in the county. It is from this Plan that projects are chosen to be designed, funded, and implemented. Historically, the region has been very successful with the rate at which the RTP’s recommendations have been implemented. Table 1-1 shows that out of the twenty recommendations from the previous 2012 Regional Transportation Plan, seven have already been completed and another six are in progress or are nearly completed.

	Recommendation	Status	Notes
1	Initiate Passenger Rail service from New Haven, CT to St. Albans, VT with a stop in Greenfield	Completed	
2	Construct a Park-and-Ride Lot near I-91 exit 24 in Whatley	Completed	
3	Acquire Scenic Easements along Designated Scenic Byways	Completed / Ongoing	
4	Realign I-91 Northbound Exit 24 Ramp Realignment	Completed	
5	Construct improvements to better accommodate slow-moving vehicles on Rt. 2/Greenfield Mountain	Completed	
6	Replace retaining walls on Route 116 along the South River.	Completed	
7	Create additional Park & Ride lots throughout the County.	Completed / Ongoing	
8	Construct Route 2 West Safety Improvements including protected turn lanes at Colrain-Shelburne Road and South Maple Street in Shelburne, and Traffic Calming in Charlemont Village Center	In Progress	Charlemont Village Ctr Traffic Calming is in design. A study was conducted at Colrain-Shelburne Rd and improvement is in design.
9	Reconstruct Rt. 2 in Charlemont, including several culverts	In Progress	Design is underway and waiting funding.
10	Expand Bus Service throughout the county	In Progress	A comprehensive service analysis is underway to evaluate ways to improve service.
11	Increase frequency & extend bus service hours during evenings and weekends.	In Progress	A comprehensive service analysis is underway to evaluate ways to improve service.
12	Advance Route 2 Safety Improvements in Ervingside, Farley, Erving Center, and Gill/Greenfield	In Progress	Improvements have been completed in Ervingside and Farley and under design for Gill/Greenfield, Erving Center, and Erving.
13	Implement Safety and Traffic Flow Improvements along Route 2 between the I-91/Route 2 Rotary and Home Depot in Greenfield	In Progress	A Road Safety Audit was completed and resulted in additional recommendations.
14	Plan for Passenger Rail from Franklin County to Boston	Preliminary Planning Phase	Monitoring of rail planning efforts is ongoing.
15	Rehabilitate the General Pierce Bridge	Preliminary Planning Phase	Rehab of the Gill-Montague Bridge must be completed first, which is now done.
16	Create a parking garage near the Regional Transit Center to facilitate regional commuting and downtown revitalization.	Preliminary Planning Phase	Existing vacant building on site has been scheduled to be demolished.
17	Construct a Bikeway to connect the downtowns of Orange and Athol	Preliminary Planning Phase	Preliminary feasibility studies have been completed.
18	Construct a sidewalk to Mohawk Trail Regional High School along Rt. 112 and North St.	Preliminary Planning Phase	MassDOT & Buckland agreed to shoulder widening instead of sidewalk construction (due to snow clearing issues).
19	Create an Erving-Wendell Bike Path to connect Erving Center with Farley and Ervingside	Preliminary Planning Phase	A feasibility study was completed in 2012. Private property issues that will need further investigation.
20	Promote ridesharing in the region	Not yet started	

*Projects are not listed in any order of priority. Status as of January 2015.

Franklin County Massachusetts

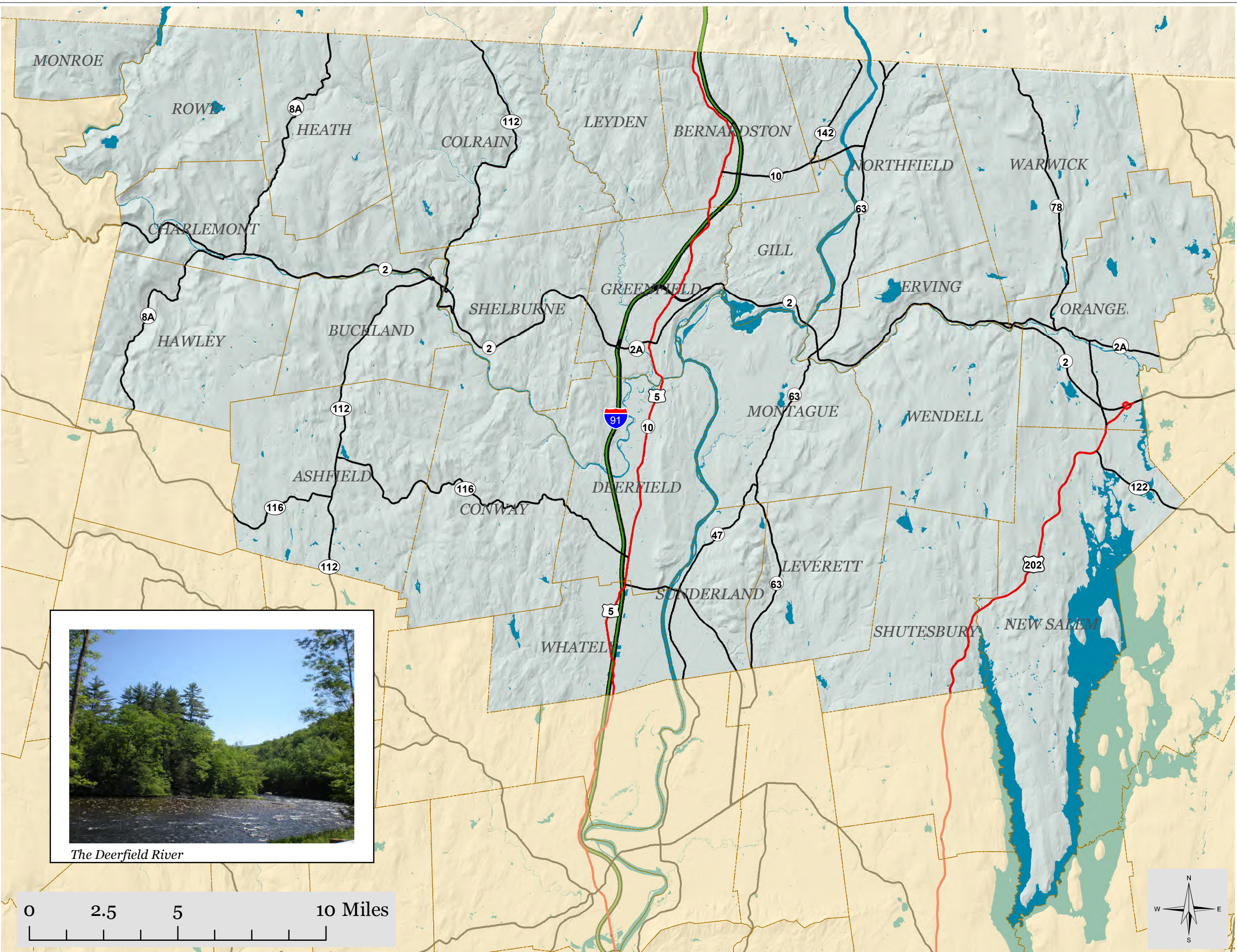
Town	Area (sq mi)	Public Road Mileage
Ashfield	40.3	83.19
Bernardston	23.41	58.07
Buckland	19.56	50.5
Charlemont	26.1	57.55
Colrain	43.38	86.32
Conway	37.71	70.96
Deerfield	32.29	100.13
Erving	13.87	43.56
Gill	13.98	43.65
Greenfield	21.73	132.35
Hawley	30.86	48.53
Heath	24.9	59.53
Leverett	22.85	43.01
Leyden	17.99	38.08
Monroe	10.71	18.39
Montague	30.4	114.31
New Salem	44.98	103.79
Northfield	34.41	83.73
Orange	35.36	103.53
Rowe	23.55	36.24
Shelburne	23.25	59.18
Shutesbury	26.61	41.95
Sunderland	14.39	46.31
Warwick	37.27	64.49
Wendell	31.99	66.47
Whately	20.18	48.27

Data Source:

Massachusetts Municipal Association



Sources: Map produced by the Franklin Regional Council of Governments Planning Department.
GIS data sources include MassDOT, MassGIS and FRCOG.
Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



The Deerfield River

2

Public Participation & Title VI Activities



2016 Regional Transportation Plan

2 Public Participation Process

Federal transportation legislation requires that each metropolitan planning organization prepare a transportation plan every four years. The legislation also mandates that an inclusive participation process be completed as part of the plan's development. The latest iteration of the federal transportation legislation, MAP-21, has placed particular emphasis on the public participation process. Specifically, it calls for increased interagency consultation, the use of visualization techniques in the public participation process, and outreach to organizations and groups that are impacted by transportation issues. Attention was particularly paid to population classes protected by federal Title VI requirements (part of the Civil Rights Act of 1964). These groups include: race, color, national origin, age, sex, and disability. This chapter describes the public participation process that the FRCOG and the FCTPO used in the development of this RTP.

The Franklin County Transportation Planning Organization and the FRCOG's Continuing, Cooperative, and Comprehensive (3C) Transportation Planning Process

The Franklin Regional Council of Governments receives federal funds to conduct regional transportation planning on behalf of the Franklin County Transportation Planning Organization (FCTPO) and is therefore required by law to carry out a continuing, cooperative, and comprehensive (3C) transportation planning process. This process depends on significant public involvement, and requires that all plans and programs consider all modes of transportation and support community development and social goals. The FCTPO is responsible for monitoring the progress of the regional transportation planning processes and making the final decision regarding any regionally significant projects to be included in the Regional Transportation Plan.

Public Participation Requirements of MAP-21

MAP-21 requires that the Regional Transportation Plan be developed in consultation with the State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. The legislation further states that consultations with these agencies should take into account plans, maps, and inventories of natural and/or historic resources as available and applicable. In addition, MAP-21 states that the planning process used by the metropolitan planning organization (MPO) should serve to promote consistency between transportation improvements and State and local planned growth and economic development patterns.

The legislation, MAP-21, notes that the public participation process associated with the development of the plan shall be developed in consultation with all interested parties and allow all interested parties a reasonable opportunity to comment on the contents of the transportation plan, and to the maximum extent practical, should include the following as a part of that task:

- Hold any public meetings at convenient and accessible locations and times;
- Employ visualization techniques to describe the transportation plan;
- Make public information available in electronically accessible format and means, such as the World Wide Web, as appropriate to afford reasonable opportunity for consideration of public information.

Public Outreach and Input during the Development of the Regional Transportation Plan

Public input is an essential component in the creation of the Franklin County Regional Transportation Plan. The input FRCOG received as part of its outreach efforts helped shape and inform the RTP's goals and recommendations. The RTP



Public outreach during the 2014 Parking Day in Greenfield

is a public document that was reviewed by all levels of government including: the FCTPO; the Franklin Regional Planning Board (FRPB); the local communities; representatives of regional, state, and federal agencies; and organizations and members of the public representing a wide array of interests. This section describes the public outreach and participation efforts conducted by the FRCOG staff.

Initial Public Outreach

At the beginning of the update process for the Regional Transportation Plan, the FRCOG developed a public participation strategy that sought to obtain public input from as many and diverse populations as possible. The strategy included hosting public forums, distributing a survey, and attending many stakeholder meetings. Two public forums were held between January and February of 2015. They were held at various times to facilitate

attendance in the central location of Greenfield at the ADA accessible John W. Olver Transit Center. In addition to these two public forums, the FRCOG also held a public meeting with municipal officials during the day to gather input specifically from the municipal perspective. To further ensure that as many stakeholders as possible were provided the opportunity to comment on transportation in Franklin County, FRCOG staff also attended many meetings of various organizations throughout the region and made presentations regarding the update process and asked for project ideas and feedback. In addition, the FRCOG staff discussed the plan informally when meeting with town boards and local and regional organizations to solicit further input regarding the update or ideas for transportation projects in the county. The details for all of these meetings can be seen in Table 2-1.

At all of the public forums the update process was explained, examples of past Regional Transportation Plans were provided, and visual aids (PowerPoint presentation, pictures, and maps) were used to augment the discussion. The forums were announced several weeks prior with ads placed in all of the local newspapers, the FRCOG website, Facebook page, and Twitter feed. Public television ads were recorded and aired prior to the forums. In addition, personal invitations were sent to a wide array of stakeholders announcing the Regional Transportation Plan update and the dates of the forums (see Appendix A for a list of stakeholders that were contacted and for a summary of the public input that was received).

To augment the input received from the public forums, the FRCOG also created a survey about transportation issues within the county. The survey was geared towards a general audience and can be viewed, along with the results, in Appendix C. The survey was available both in an online format and in hardcopy. The general survey that the FRCOG distributed looked to capture several specific pieces of information. Namely, survey respondents were asked: to rate the state of the existing transportation infrastructure; to describe their current daily travel modes and routines; and what their top three recommendations and priorities would be for transportation improvements in the region. The FRCOG received 52 completed surveys from county residents and used the information provided in the surveys to help inform this RTP.

During the update of this Regional Transportation Plan, draft chapters were made available for review on the FRCOG website (www.frcog.org). In addition, information regarding the update was regularly posted on FRCOG's social media, including Facebook and Twitter.

Final Public Outreach and Approval Process

Once the FRCOG staff had completed a draft of the 2016 Regional Transportation Plan, public input was sought from a variety of stakeholders as well as those required by MAP-21

during a 30-day public review and comment period between June 25 and July 24, 2015. The draft RTP was made available for public review through a variety of means, including: press releases and legal notices to local media, mailings to stakeholders and interested individuals/ agencies/ organizations, notices on the FRCOG Facebook and Twitter accounts, and posting of the draft on the FRCOG website. In addition, two public meeting were held on July 15, 2015 in the centralized location of Greenfield to directly obtain public input regarding the draft RTP. One meeting was held at 11:30am to coincide with bus schedules and the other meeting was held at 5:30pm to allow people working during the day to attend the meeting. Visual aids, such as a PowerPoint presentation, maps, and photographs were used during this meeting to help attendees visualize the RTP and its recommendations.

As part of this outreach, the FRCOG received several comments on the draft RTP. Those comments that were received were reviewed and incorporated, as appropriate, into the RTP during its preparation (all comments received can be seen in Appendix B). Following the official FCTPO Public Participation Plan's requirements of a minimum thirty-day review period, the FCTPO endorsed the 2016 Regional Transportation Plan by vote, following an official report and discussion, at a meeting open to the public at large.

Environmental Justice and Title VI

In 1994, a Presidential Executive Order directed every federal agency to make Environmental Justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on "minority populations and low-income populations." The U.S. Department of Transportation has addressed this directive by involving the potentially affected public in developing transportation projects that fit harmoniously within their communities without sacrificing safety and mobility. This initiative recognizes that effective transportation decision-making depends upon understanding and properly addressing the unique needs of different socioeconomic groups. Title VI is a section of the Civil Rights Act of 1964 prohibiting discrimination based on race, color, national origin (including limited English proficiency), age, sex, and disability. All federally-financed programs must ensure that all people be able to participate fully in the public participation process.

The Franklin Regional Transportation Plan has identified a number of goals in support of Environmental Justice and Title VI. There is a commitment that planning and programming within the region be nondiscriminatory and that all segments of the Franklin County population are able to participate fully in regional transportation planning processes and to access transportation facilities and services.

Beginning in 2001, the Franklin Unified Planning Work Program (UPWP) has had a specific task for Environmental Justice and Title VI-related activities. The work under this task has focused on the following:

- Analyzing and mapping U.S. Census Bureau data on income and race in order to identify Environmental Justice target areas that have the greatest concentration of minority populations and residents living below the poverty level;
- Conducting an Equity Analysis based on the recommended projects in the RTP and approved projects in the TIP. This analysis was updated for this RTP. Reviewing current transit routes and the level of service for the Franklin County region, especially in the identified Environmental Justice target areas, and working with the regional transit agencies to find ways to maintain and improve transportation services in the region, as funding allows;
- Conducting outreach to low-income and minority populations and community organizations to identify unmet transportation needs among these groups and develop strategies for addressing them; and
- Reviewing and strengthening current transportation planning and decision-making processes to increase the representation of low-income and minority residents.

For this update to the RTP, FRCOG staff used 2009-2013 Five Year Estimates from the U.S. Census data to identify 18 Environmental Justice areas.¹ They are listed in the following Table 2-1. After identifying the Environmental Justice areas, staff conducted a review of approved projects in the TIP and recommended projects from the previous 2012 RTP in order to determine if the Environmental Justice areas receive an equitable distribution of transportation funding compared to the region as a whole. It was determined that in many aspects, the populations within the Environmental Justice areas are better served by the existing transit system than Franklin County residents as a whole and that 78 percent of highway project spending and 58 percent of highway projects occur in the EJ areas.² The results of this analysis are summarized in FRCOG's *2015 Regional Transportation Equity Analysis* (completed in July 2015).

The Environmental Justice (EJ) areas have been the focus of the FCTPO's EJ initiatives and the FCTPO has worked to increase representation of these EJ populations in the public

¹ EJ Areas are defined as blockgroups where minorities comprise at least 9% of the population and at least 12% of the population is below the poverty level.

² The very large percentage of highway spending inside the EJ areas can be attributed to several large projects, primarily the rehabilitation of the Gill-Montague Bridge, which has a cost of \$40.7 million.

participation and transportation planning processes. In addition, the FRCOG has also worked to increase its outreach and representation of Title VI/Nondiscrimination populations. The primary method that has been used to contact these populations has been through outreach to social service agencies and organizations that serve Franklin County. Just recently, the FRCOG transportation staff was invited to participate in the Franklin County Resource Network (FCRN), which is a large network of social service providers who serve a range of populations throughout Franklin County and the larger region. The FRCOG staff is successfully continuing to work steadily to make new contacts that reach underrepresented populations.

Table 2-1: Environmental Justice Areas in Franklin County

Environmental Justice Area 2015	Which Criteria Met?	
	Poverty Criteria	Minority Criteria
Colrain, eastern portion		X
Deerfield, northern portion		X
Erving, western portion		X
Gill, entire town		X
Greenfield, Cheapside area		X
Greenfield, town center and surrounding areas	X	X
Greenfield, west of I-91/Leyden Woods	X	X
Monroe/Rowe/Charlemont	X	
Montague, Millers Falls	X	
Montague, non-urban area		X
Montague, Turners Falls	X	X
Northfield, northern portion	X	
Orange, town center and surrounding areas	X	
Shelburne, Shelburne Falls	X	
Shutesbury/Leverett		X
Sunderland, entire town		X
Warwick/east Erving	X	
Wendell, entire town	X	X

Access to Essential Services

The FRCOG is aware of the critical role of transportation in community access to essential services. The FRCOG staff is currently working on a project focusing on the health impacts of transportation access region wide. The study is looking at access by various modes of transportation, including fixed route transit services, bicycle, and pedestrian facilities. This project applies a “health lens” by creating and examining travel scenarios for different sectors of the population across the region in order to understand how increased transportation options can improve health outcomes. The scenarios will look at travel options for getting to specific destinations/services such as: grocery stores, sources of fresh foods, health care facilities, and recreational facilities. This analysis will identify potential transportation improvement projects and gaps in regional transportation services. This work will be completed shortly by June 30, 2015.

Consideration of Environmental and Land Use Issues

During the update to the 2016 Regional Transportation Plan, the FRCOG considered a wide range of issues and incorporated these factors throughout the RTP and its recommendations. These issues included: environmental, land use, historic preservation issues, and local and regional priorities and concerns. To ensure that the draft RTP is compatible with other land use/resource protection plans, the FRCOG contacted representatives of state and local agencies responsible for land use management, historic and natural resources, and environmental protection with the goal of having a meeting to discuss the draft RTP. These representatives included: regional land conservation trusts, the Massachusetts Historic Commission, the MA DEP, MA DCR, MA EOEEA, and others. Unfortunately, due to scheduling conflicts and winter weather this meeting could not be held. However, FRCOG staff sought input from these representatives outside of a formal gathering and included the information received in the drafting of the RTP.

In addition, when preparing the RTP the FRCOG considered land use and environmental issues and the consistency between transportation planning and other planning activities, through its dual role as the staff for the Transportation Planning Organization (TPO) and as the Regional Planning Agency (RPA) for the Franklin County region. As the RPA for the Franklin County, the FRCOG has statutory responsibility for the coordinated and orderly development of the region, including regional growth planning and transportation planning. The RPA staff overlaps with the TPO staff, with most FRCOG transportation staff involved in planning activities beyond transportation. The RPA works with towns, regional organizations, and State agencies on land use, open space, and natural resource planning, and assists towns with zoning revisions and redevelopment projects. For example, the FRCOG has been the lead consultant for Community Development Plans for fourteen of the twenty-six towns in Franklin County and assisted with seven other towns in the county. The FRCOG has also worked on a number of municipal Master Plans, Open Space and Recreation Plans, watershed assessment plans, scenic byway corridor management plans, regional economic development plans, among others. The FRCOG has also assisted a number of towns with zoning revisions to support smart growth development patterns. In 2013, the FRCOG completed *Sustainable Franklin County: A Regional Plan for Sustainable Development*. Through an intensive public outreach effort, this plan identified proposed Priority Development Areas and Emerging Development Areas for Franklin County.

Critical Linkages

A new tool has been developed through a collaboration between the Nature Conservancy, UMass Amherst, and MassDOT to model the impacts on habitat connections from transportation and development projects. This model identifies critical habitat linkages in

the Commonwealth and can be used by planners and local communities to see how a specific transportation project, such as a culvert or guardrail replacement, could potentially impact forest and river habitat. The FRCOG staff is currently updating a bridge and culvert inventory for Franklin County. This inventory will combine the information from the Critical Linkages model so that the towns will have a better understanding of how their local infrastructure could impact the environment and mitigate potential harmful effects.

Interagency Consultation

Coordination with Local Agencies

The FRCOG provides technical assistance to the Franklin County towns and works as partners with many local organizations and agencies. This work ranges from performing traffic counts, to identifying and preparing local grant applications, to creating a wide assortment of planning documents. The local agencies and committees that were consulted in the update of this Plan include:

- All twenty-six municipalities in Franklin County
- Franklin Regional Transit Authority
- Franklin Regional Housing and Redevelopment Authority
- Mount Grace Land Conservation Trust
- Franklin Land Trust
- Franklin County Community Development Corporation
- Franklin County Resource Network
- Franklin County Home Care Corporation
- Councils on Aging
- Community Action
- Franklin County Chamber of Commerce
- Greenfield Community College
- Franklin Regional Planning Board

Coordination with State and Federal Agencies

As part of its routine work, the FRCOG also works with a number of state and federal agencies. This is especially true since the vast majority of Franklin County's transportation (and other) projects are funded by the state and federal government. The state and federal agencies that were consulted in the update of this RTP include:

- Massachusetts Department of Conservation and Recreation (DCR)
- Massachusetts Historical Commission
- MassDOT, Highway District 1 and 2 and Office of Transportation Planning

- MassDOT Rail Division and MassDOT Transit Division
- Massachusetts Department of Housing and Community Development (DHCD)
- Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA)
- Massachusetts Department of Environmental Protection (DEP)
- Massachusetts Housing Partnership (MHP)
- Federal Highway Administration (FHWA)

Coordination with Other Local MPOs

In addition to coordinating transportation planning with local and state agencies, the FRCOG also works closely with its neighboring MPOs. It has a long standing relationship with the other western Massachusetts MPOs of the Berkshire Regional Planning Commission (BRPC) and the Pioneer Valley Planning Commission (PVPC). Recently, the FRCOG has also begun working more closely with its Vermont and New Hampshire counterparts, specifically the Southwestern Regional Planning Commission (SWRPC) and the Windham Regional Commission (WRC). The FRCOG has partnered with all of these MPOs on many cross-regional contracts, but particularly on Scenic Byway projects. In November of 2014, the SWRPC, WRC, and the FRCOG met to discuss many tristate issues, including transportation.



Participants at the 2015 Bike Breakfast at the John W. Olver Transit Center

Table 2-1: RTP Public Participation Outreach Schedule

Date	Type of Meeting	Audience	Location
May 12, 2014	FRTA Community Conversation on Transit	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Turners Falls
May 14, 2014	FRTA Community Conversation	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Greenfield
May 19, 2014	FRTA Community Conversation	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Shelburne
May 20, 2014	FRTA Community Conversation	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Orange
August 26, 2014	FRTA Community Conversation	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Greenfield (Farmer's Market)
September 4, 2014	Franklin County Energy Committees	Attendees included: FRTA, members of municipal Energy Committees, Greening Greenfield, and others interested in transit and transportation issues.	Greenfield
September 19, 2010	PARK(ing) Day community event	Attendees included members of the general public, Greening Greenfield, Town of Greenfield Master Plan Implementation Committee, and the Greenfield Business Association.	Greenfield
January 8 2015	FRTA Transit Advisory Committee/ Regional Coordinating Committee	Attendees included: FRTA, members of the FRTA TAC and RCC, MassMobility, Community Action, Montague Catholic Social Ministries, MassRIDES, Transportation Justice for Franklin County, Greenfield Town Council representatives, and members of the public.	Greenfield
January 21, 2015	Franklin County Comprehensive Economic Development Strategy Meeting	CEDS Committee Members (Each town in Franklin County has a town-appointed representative on the Committee. Also serving on the Committee are appointees of the FRCOG Executive Committee, the Franklin County Selectmen's Association, and North Quabbin Chambers of Commerce, the Franklin County Community Development Corporation (CDC), and the FRPB.	Greenfield
January 22, 2015	Franklin Regional Planning Board	Attendees included: Franklin Regional Planning Board members, local officials, and members of the general public	Greenfield
January 27, 2015	RTP Public Forum	Attendees included: municipal representatives and FRTA.	Greenfield
February 4, 2015	RTP Public Forum	Attendees included: FRTA, Transportation Justice for Franklin County, MassDOT, and members of the public with an interest in transportation issues.	Greenfield
February 5, 2015	Franklin County Resource Network	Attendees included: representatives from social service organizations in the greater Franklin County region	Greenfield
February 12, 2015	RTP Public Forum	Attendees included: FRTA, Montague Energy Committee, Greenfield High School, Greenfield DPW, Greenfield Planning Board, MassDOT, Greening Greenfield, Franklin County Home Care Corp., and members of the public with an interest in transportation issues.	Greenfield

3

Goals & Performance Measures



2016 Regional Transportation Plan

3 Transportation Planning Goals and Performance Measures

The most recent federal transportation legislation, MAP-21, requires the establishment of a performance and outcome-based program at the state and metropolitan planning organization (MPO) level. MAP-21 establishes national performance goals in seven areas and the states and MPOs are required to then establish coordinated performance measures that track their progress in these goal areas with tangible targets.

It is important to note that the goals presented in this chapter are the same goals from previous Franklin County RTPs, which have been identified and validated through extensive public outreach. However, to meet the requirements of MAP-21, they have been slightly reorganized or reworded. Only their format has changed, but the substance of the goals remain. The seven MAP-21 goal areas are shown in Table 3-1 below along with the corresponding Franklin County RTP goal.

The new performance measures have been coordinated with *weMove Massachusetts*, the Commonwealth's Long Range Transportation Plan that includes state-level performance measures. Some of these measures have been adapted to the data available for Franklin County and to its more unique rural character.

The recommendations found throughout this RTP all work towards the realization of these goals and performance measures. They will be implemented through coordinated regional planning and, in part, specifically through the Franklin County Transportation Planning Organization's (FCTPO) Transportation Improvement Program (TIP) and its Unified Planning Work Program (UPWP). These shorter-term planning documents reflect the priorities of the Regional Transportation Plan, while guiding how and when projects should be implemented within the financial constraints of anticipated Federal and State Funding. While the FRCOG will continue to strive to meet the goals and performance measures, it should be noted that the implementation of many of the goals are out of its control and depend on federal and state funding and policy decisions.

Table 3-1: Relationship between MAP-21 and RTP Goals

MAP-21 Goal Area	Corresponding FC RTP Goal
Safety	Goal 2
Infrastructure condition	Goal 1
Congestion reduction	Goal 3
System reliability	Goal 3
Freight movement & economic vitality	Goal 4
Environmental sustainability	Goal 5
Reduced project delivery delays	N/A

Performance Measures for the Franklin County Regional Transportation Plan

Goal 1: Maintain infrastructure to facilitate the mobility of people and goods traveling to, from, and through Franklin County.

Objective A) Maintain condition of on and off-system bridges

Measure: Reduce the number of bridges that are structurally deficient or functionally obsolete.

Target: Reduce the number of bridges that are structurally deficient or functionally obsolete by 5% over 10 years.

Objective B) Maintain the condition of the region's roadways

Measure: Maintain or improve pavement conditions as measured by FRCOG's Pavement Management System.

Target: Increase percentage of pavement in good or excellent condition by 5% over 10 years.

Objective C) Maintain the region's transit fleet

Measure: Maintain the fixed route and paratransit vehicles in a state of good repair.

Target: Replace vehicles on a FRTA-set replacement schedule.

Goal 2: Improve safety and security of transportation network.

Objective A) Reduce the number of fatal and injury crashes on roadways

Measure: Make safety improvements so that crashes decrease throughout region.

Target: (1) Reduce number of crashes in region by 10% over 10 years.

(2) Reduce proportion of injury & fatal crashes to total crashes by 5% over 10 years.

Objective B) Expand emergency preparedness and training

Measure: Identify transportation infrastructure vulnerabilities and plan for natural disaster and other emergencies.

Target: Continue involvement with the Regional Emergency Preparedness Committee and the Western Regional Homeland Security Advisory Committee.

Objective C) Identify dangerous locations for pedestrians and bicyclists and improve the safety for all users

Measure: Identify potentially dangerous locations and conduct complete streets assessments with safety recommendations.

Target: Conduct 10 complete street site assessments with recommendations by 2020.

Goal 3: Increase transportation options and reduce vehicle emissions.

Objective A) Expand the transit system

Measure: Increase the frequency of fixed routes, expand the hours of service, and increase fixed transit routes.

Target: (1) Increase the frequency of routes to at least average 30 minute headways on Route 21; 60 minute headways on Route 31 & 32; 120 minute headways on Routes 23 & 41.

(2) Add weekend and evening service.

(3) Add routes to currently unserved areas.

Objective B) Expand bicycling and walking network

Measure: Increase the number and safety of bicycling and walking facilities.

Target: Increase share of walkers and bicyclists to 8% in 10 years.

Objective C) Provide alternatives to driving alone

Measure: Increase the use of the park and rides throughout the region and promote the use of ridesharing.

Target: (1) Increase the utilization rates of the park and ride lots by 50% over 10 years.

(2) Increase the share of workers commuting by carpool to 10% in 10 years.

Objective D) Minimize congestion on roadways

Measure: Identify congested roadways and implement improvements.

Target: (1) Meet volume-to-capacity ratio of less than 1.0 ($v/c < 1.0$) on major corridors in 5 years.

(2) Improve level of service (LOS) on major corridors to LOS D or better within 10 years.

Objective E) Increase passenger rail options to serve commuter purposes.

Measure: Establish a passenger rail system between Greenfield and Springfield.

Target: Establish a passenger rail system between Greenfield and Springfield that runs at least 4 times a day.

Goal 4: Promote economic development of the region while maintaining its rural character.

Objective A) Encourage regional tourism

Measure: (1) Promote motorist and bicycling touring in the region.

(2) Preserve natural, scenic, cultural, and historic resources.

(3) Increase access to regional recreational resources.

Target: (1) Launch a bicycle promotional campaign for western Massachusetts by 2020.

(2) Preserve natural, scenic, cultural, & historically significant land along the region's byways.

(3) Identify gaps in access to important regional recreational resources and recommend corrective measures.

Objective B) Ensure that freight movement is efficient and effective

Measure: Improve safety and decrease delay along freight routes.

Target: Improve level of service (LOS) on major freight corridors to LOS D or better within 10 years.

Objective C) Improve transit system to advance workforce development in the region

Measure: Increase the frequency of fixed routes, expand the hours of service, and increase fixed transit routes.

Target: See targets for 2A

Goal 5: Promote sustainable transportation, reduce greenhouse gas emissions, and prepare for climate change.

Objective A) Ensure roadways accommodate all non-motorist users

Measure: Promote adoption and implementation of Complete Streets policies.

Target: 20% of Franklin County towns have adopted Complete Streets policies over next 5 years.

Objective B) Improve transit system

Measure: Increase the frequency of fixed routes, expand the hours of service, and increase fixed transit routes.

Target: See targets for 2A

Objective C) Support sustainable development land use patterns

Measure: Identify transportation projects that support sustainable development.

Target: Add criteria to the TIP Evaluation Criteria that supports sustainable development-friendly projects in 3 years.

Objective D) Minimize potential negative impacts on transportation infrastructure from climate change

Measure: Identify vulnerable roadways/culverts and other transportation infrastructure susceptible to climate change.

Target: Create a list of prioritized projects with improvement schedule in 3 years.

4

Regional Demographic & Economic Profile



2016 Regional Transportation Plan

4 Regional Demographic and Economic Profile

Understanding Franklin County's current and future demographic, socioeconomic, and land use patterns are necessary to effectively plan for the region's transportation needs. Chapter 4 examines in detail the current population and economic conditions of the county in order to determine transportation issues that should be addressed. Chapter 4 also looks to the future and examines projected population and job growth with the intent of anticipating future transportation needs.

Franklin County is the most rural county in Massachusetts. It is located in the northernmost portion of the Connecticut River Valley of western Massachusetts. It borders both Vermont and New Hampshire. Franklin County also borders the Massachusetts counties of Hampshire, Berkshire, and Worcester.

Franklin County has a population of 71,408 and a population density of 98 people per square mile in its 725 square mile area. The majority of the twenty-six towns in the county are very small – averaging approximately 1,400 residents. The largest municipality, and only city, is Greenfield with a population of 17,526 people. Ninety percent of the housing stock in Franklin County is owner-occupied, of which 65 percent is in the form of single-family homes.¹ The landscape in Franklin County is predominately open space, forest, and farmland. The soils in the Connecticut River Valley are ideal for agricultural uses, and consequently, the region has a rich agricultural history.

Regional Demographics

Population

To better assess the transportation needs of the region, it is necessary to understand how the population in Franklin County is changing. Between 1970 and 2000, the county's population grew by 20 percent, an increase of 12,300 people. Much of this growth took place during the 1970's and 1980's. Following the trend of slower growth that began in the 1990's, the county's population remained relatively stable between 2000 and 2013, with a total population of 71,408 in 2013 (a growth rate of -0.2%). Table 4-1 illustrates the more recent population changes in the last thirteen years in Franklin County and surrounding counties.

¹ Unless otherwise noted, all socio-economic demographic data is from the U.S. Census Bureau, American Community Survey, Five-Year Estimates 2009-2013.

The population growth that occurred between 2000 and 2013 took place in towns scattered throughout Franklin County without a very clear geographic pattern. The top five towns which experienced the most growth are: Deerfield, Erving, Orange, New Salem, and Gill.

Table 4-1: Estimated Population for Franklin County and other Western Massachusetts Counties, 2000 to 2013

Geography	2000 Census Population	2013 Census Population	2000-2013	
			Change	Percent Change
Franklin County	71,535	71,408	-127	-0.2%
Berkshire County	134,953	130,545	-4,408	-3.3%
Hampden County	456,617	465,144	8,527	1.9%
Hampshire County	152,251	159,267	7,016	4.6%
Worcester County	750,963	802,688	51,725	6.9%
Massachusetts	6,349,097	6,605,058	255,961	4.0%

Sources: U.S. Census Bureau - 2000 Census of Population & Housing; 2009-2013 American Community Survey, Five-Year Estimates, U.S. Census Bureau.

These towns are primarily located throughout the southeastern quadrant of the region. The majority of the towns that lost population during this time period are located in West County.

Age Distribution of the Population

For transportation planning, it is important to know not only the size of a region's population, but also its composition by age group and how that may change over time. As people age, their use of the transportation network tends to change. For example, the elderly are less likely to drive by themselves and are more likely to use public transit or find other alternatives. In addition, the number of adult workers in a region affects peak traffic volumes as they commute to their workplaces. Like much of the nation, Franklin County is getting older as the "Baby Boomer" generation ages. Half (49%) of the Franklin County population is currently aged 45 and older. Of that, 16 percent is aged 65 and older and a quarter (23%) is aged 25 to 44 years old.

The region is expected to see a significant increase in the number of elderly residents over time. The "Baby Boomer" generation (born 1946 to 1964) has begun reaching 65 years old and will reach 75 years old in 2021. Studies have shown that nationally, over 40 percent of people age 75 and above are either non-drivers or have limited their driving.² As a result, it will be important to provide transportation services, including public transit and paratransit/van services for Franklin County's expanding elderly population.

² Straight, A., *Community Transportation Survey*, America Association of Retired People, 1997.

Other age groups of interest for transportation planning are 25 to 44 years old and 45 to 65 years old. These age groups comprise the bulk of the workforce and typically make their trips to and from work during the peak morning and evening commute hours. In 2013, 88 percent of Franklin County residents commuted to work by car (with 78% driving alone and 8% carpooling), 5 percent walked, and 1 percent took public transportation. Traffic congestion during commuting hours can be addressed in part through provision and promotion of healthy transportation options to single occupancy vehicle travel for work commutes. Options could include the use of park and ride lots for carpooling or transit, ridesharing programs, and bicycle and pedestrian facilities. Congestion can also be influenced through flexible work schedules and through the provision of telecommunications infrastructure that helps support residents who work from their homes. In 2013, approximately 6 percent of Franklin County residents worked at home.

Ethnic and Racial Diversity

Franklin County is the least racially and ethnically diverse county in the Commonwealth. As of 2013, the U.S. Census Bureau shows that approximately 94 percent of the population in the county is White. This is compared to a Massachusetts percentage of 80 percent that is White. The remaining population in Franklin County is split predominately between Black (0.9%) and Asian (1.6%), with a very small percentage (0.2%) that is Native American/Alaska Native. Hispanics make up the largest minority in Franklin County at 3.3 percent.³ The racial and ethnic composition of the population has remained fairly stable since 2000, although the Hispanic population has increased slightly from 2 percent of the total population in 2000.

Population Projections to 2040

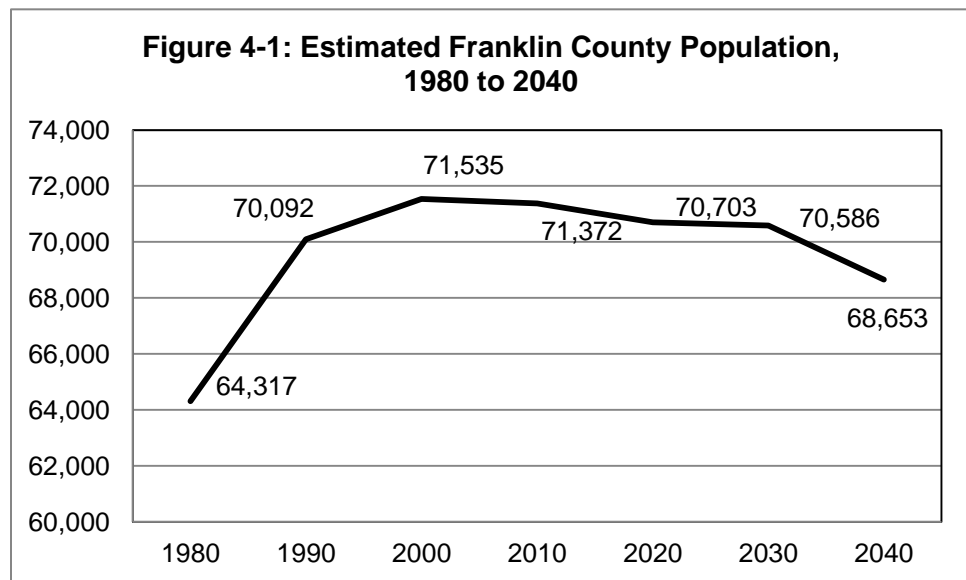
The demographic data presented shows that the Franklin County population size is currently stable, it is gradually getting older, and the ethnic composition is only slightly changing. It is also important to look ahead and forecast how the population may change in the future in order to meet the shifting demands of the region. As part of this effort, MassDOT, in partnership with the UMass Donahue Institute, has developed socio-economic forecasts for all regions of the Commonwealth, including Franklin County, out to the year 2040. Those forecasts have also been applied to the twenty-six municipalities in the county.⁴ In general, the MassDOT forecasts show that the next twenty-five years will be a period of moderate

³ According to U.S. Census definition, Hispanic or Latinos are considered an ethnicity and may be of any race.

⁴ The FRCOG has adjusted the municipal forecasts based on local conditions that the projection methodology does not take into consideration, such as presence of broadband infrastructure or passenger rail.

growth for the Commonwealth as a whole. Massachusetts is projected to grow at 10 percent between 2010 and 2040 with some places increasing more rapidly and some losing population. During this same time, Franklin County is projected to lose 4 percent of its total population, decreasing to 68,653 people by the year 2040. The total population loss for the county over the next twenty-five years will consist of approximately 2,719 people. This loss of population can largely be attributed to the aging of the large Baby Boomer group and fewer births to replace their loss. There is also very little immigration projected to occur in Franklin County to

make up for this population loss, which is the driving force of much of the state's growth. Figure 4-1 shows the projected change in the Franklin County population in relation to the county's past population growth since 1980. The projected population



loss emphasizes the RTP goal of continued maintenance of the transportation system rather than expanding it.

Income and Employment Profile

Income and Wealth

The income levels of a community often indicate the potential transportation needs of a region. Areas with lower-income populations tend to benefit more from the existence of public transportation because the costs associated with using public transportation are less than the costs of owning and maintaining a car. In addition, low income households often do not have the resources needed to cope with rising fuel costs, such as moving closer to work or purchasing a more fuel-efficient vehicle.⁵

In general, U.S. Census data shows that Franklin County's incomes are much lower than Massachusetts as a whole. In 2013, the median household income for the county was

⁵ Cooper, Mark N. "Rising Energy Prices Strain Household Budgets and the Economy For Most Americans," *Consumers Union*. September 2004.

\$53,100, which is much less (24% less) than Massachusetts's median household income of \$66,866. Another income indicator is per capita income. By this measure, Franklin County's income is still 22 percent lower than the Commonwealth's. Franklin County's per capita income is \$29,259, compared to the Massachusetts per capita income of \$35,763. The lower per capita and median income figures for Franklin County in part reflect the lower average salaries and lower costs of living in western Massachusetts compared to Boston and other eastern Massachusetts communities. However, these statistics also reflect economic challenges within the region. These challenges include the loss of a historic manufacturing employment base. As numerous jobs have left Franklin County, they have often not been replaced by comparable employment opportunities with good wages, which have resulted in lower incomes in the region.

According to the U.S. Census Bureau's Small Area Income Estimates Program, Franklin County had an estimated 12.6 percent poverty rate, compared to 11.9 percent for the State in 2013. The areas experiencing high poverty rates include several of the downtowns and village centers that had once been traditional hubs of manufacturing employment, such as Turners Falls (19.9%), downtown Greenfield (15.4%), downtown Orange (12.7%), and Shelburne Falls (9.4%). The small, remote hill towns of Rowe (15.9%), Hawley (13.6%), and Monroe (11.1%) are also impacted by high poverty rates.

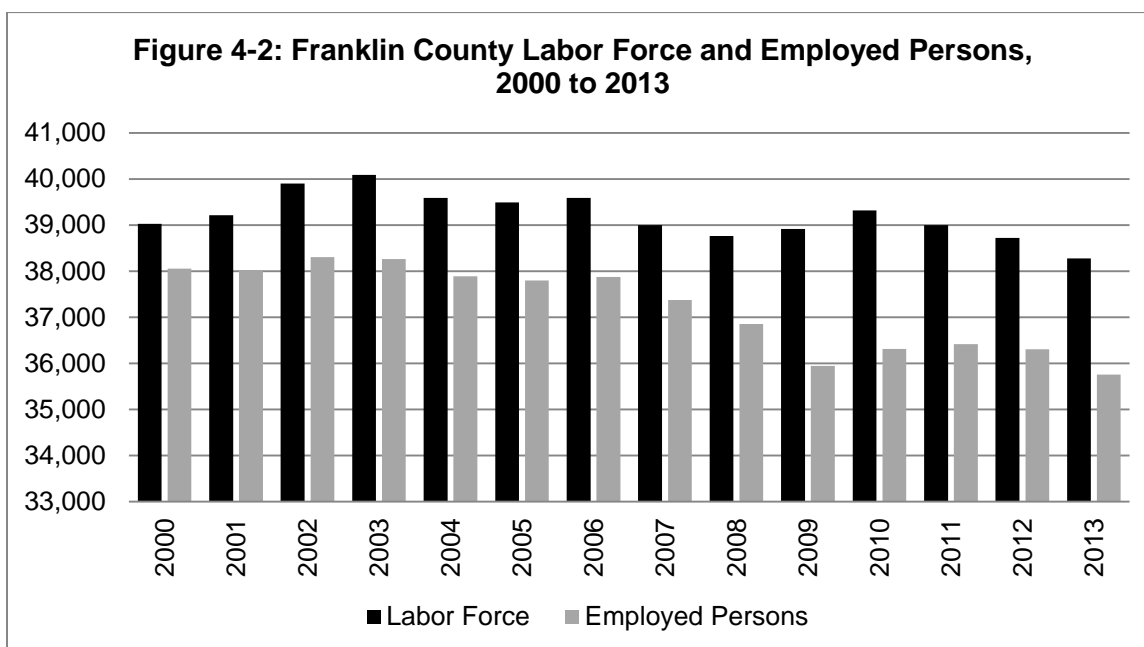
Employment

Regional employment trends reflect both the condition of the national and regional economy and changes in the region's population. When employment opportunities are created in a region, people are likely to move there. Similarly, when jobs in a region are lost, there is typically an out-migration of residents. To understand long-range transportation trends and commuting patterns, it is important to understand the size of an area's labor force and its employment level. An area's labor force is defined as the number of residents age 16 or over who are currently employed or who are searching for work. Unemployment figures describe the percentage of people in the labor force who are not employed (part-time or full-time) during a certain period and who are actively seeking work.

Labor Force

According to the Massachusetts Executive Office of Labor and Workforce Development (EOLWD), Franklin County's labor force has fluctuated over the past fifteen years. The labor force grew throughout the 2000s and then decreased during the recent Great Recession. After 2008, the Franklin County labor force recovered and began to grow again for several years after the Recession. However, since 2010, the labor force has declined back to pre-

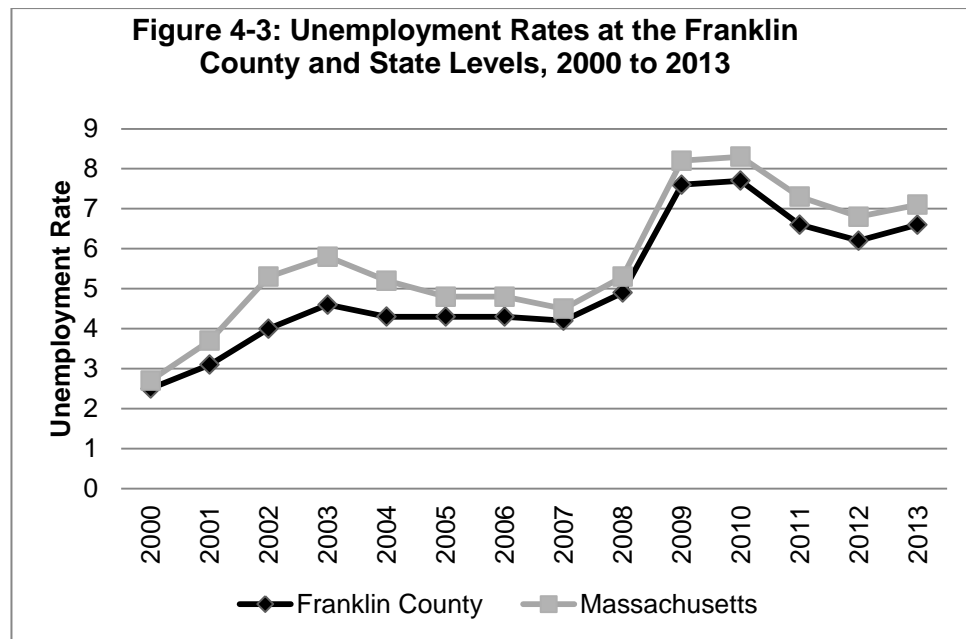
2000 levels. Figure 4-2 shows the changes in the region's labor force and employment levels.



Predictably, the largest town labor forces in Franklin County are located in the most populated communities. Greenfield contains 24 percent of the county's population and accounts for 23 percent of the labor force for Franklin County. Together, the four largest towns (Greenfield, Montague, Orange, and Deerfield) in the region comprise 54 percent of Franklin County's total population and 52 percent of the county's labor force.

In 2013, Franklin County's unemployment rate of 6.6 percent was only slightly lower than the State (7.1%). However, unemployment levels among the individual towns vary greatly. Several towns have consistently experienced high rates of unemployment. According to data from the Massachusetts Department of Labor and Workforce Development for 2013, eight towns in Franklin County had higher unemployment rates than the State rate. The towns with the highest unemployment rates fall into two types of categories: 1) isolated hill towns and 2) downtowns and village centers that had been traditional hubs of manufacturing employment. The towns of Charlemont (7.5%), Wendell (7.4%), Colrain (7.3%), and New Salem (7.1%) have high unemployment rates and are located in the more rural areas of the county. The population centers of Shelburne (9.5%), Orange (9.1%), Montague (7.5%), and Greenfield (7.1%) are also sites of high unemployment. These unemployment figures do not distinguish between full or part-time employment and obscure

the fact that underemployment is a significant problem for the region. Figure 4-3 shows the change in unemployment in Franklin County between the years 2000 to 2013.



Although the unemployed are not commuting to jobs, they are often traveling for employment interviews and training. Unemployed residents can greatly benefit from support services, including transit services, which can help them access, obtain, and keep good jobs. Without adequate public transportation options, it can be difficult for potential workers who do not have the use of a vehicle to access and maintain quality employment. Assisting low-income residents with transportation to work, training, and educational opportunities that can improve their employment options, is a major focus of the transit network in Franklin County and of proposed transit service improvements. Chapter 9, “Transit and Paratransit Services,” describes in detail the transit network and its various services.

The best estimates of self-employed workers in Franklin County are from the U.S. Census Bureau’s data on non-employer businesses, which is reported annually (with a two-year lag time). Non-employer establishments are defined as having no paid employees (other than the self-employed individual), have annual business receipts of \$1,000 or more, and are subject to federal income taxes (thus excluding non-profit organizations). The Census Bureau’s most recent data (2013) estimates that Franklin County has an estimated 6,103 non-employer businesses, which is a slight decrease of 88 businesses since 2008.

Major Employers

There are 33 employers in the region that have at least 100 employees. Most of the major employers are located in the county's primary employment centers, including Deerfield, Greenfield, Orange, and Whately. Yankee Candle, which has its headquarters and a large retail store in Deerfield and manufacturing facility in Whately, is the largest employer in Franklin County with more than 1,000 employees.

It is important to note that many Franklin County residents are employed outside of Franklin County; 33 percent of employed county residents commute to jobs outside of the county, often in nearby communities in Hampshire County, such as Amherst and Northampton. The largest single employer of Franklin County residents is the University of Massachusetts at Amherst. The most recent data available shows that in 2002, UMass Amherst estimated that it employed 1,250 Franklin County residents (not including student employees). UMass Amherst has a total of approximately 5,300 non-student staff and faculty members.

The closure or downsizing of major employers in the region has had a variety of impacts on the regional economy and on residents. These events have had a negative impact on employment levels and incomes, and at times have contributed to the out-migration of the traditional working age populations.

Just to the north of Franklin County, the Vermont Yankee Nuclear Power Station (VY) in Vernon, VT, permanently ceased all operations on December 31, 2014. In 2014, the plant had 550 employees, of which 101 (or 18%) lived in Franklin County. These employees, most requiring very specialized skills to operate and manage the power plant, have relatively high wage and salary levels – much higher than the average regional income. Job levels at the plant will gradually decline as the decommissioning process continues over the next six to seven years. By 2021, it is expected that there will only be 24 employees to manage the site.⁶



A farm stand in Franklin County.

Tourism in Franklin County

One growing sector of the region's economy is the tourism sector. Many of the

⁶ "Economic Impacts of Vermont Yankee Closure," UMass Donahue Institute. December 2014.

communities in Franklin County view tourism as a way to enhance their local economies and support local artisans and craftspeople, and also to promote and protect the region's natural, cultural, and historic resources, including farmland and forestland. More information on tourism in the region can be found in Chapter 11: Scenic Byways and Tourism.

Telecommunications Infrastructure Improvements

An important factor in the region's economy is the availability and efficiency of the telecommunications infrastructure. Telecommunications infrastructure includes systems that provide telephone, television and broadband internet services. In many parts of Franklin County, the services available through the current telecommunications infrastructure are inadequate for present day needs. Issues of reliability, affordability, and access are significant obstacles for small and large businesses, educational and health care institutions, and individuals. Fortunately, a significant project was recently completed that is changing the telecom landscape in the region.

In 2008, Governor Patrick and the state legislature established the Massachusetts Broadband Institute (MBI)⁷ and a \$40 million Incentive Fund to construct the "middle mile" infrastructure that connect unserved areas to the greater global telecommunications network. In 2010, the MBI received a \$45 million federal award, which was combined with over \$26 million in state funding, to construct the *MassBroadband 123* middle-mile network. The first segment of this middle mile network was constructed along the I-91 corridor and in coordination with the Massachusetts Department of Transportation.



Installing broadband conduit along I-91.

Completed in 2014, this network provides the critical connection for 120 cities/towns in western and north-central Massachusetts to the global internet network. In addition, *MassBroadband 123* provides direct connects to over 1,200 community anchor institutions (such as town halls, police departments, schools, and medical centers) to this network.

⁷ More detailed information about the MBI is available on their website at <http://broadband.masstech.org>.

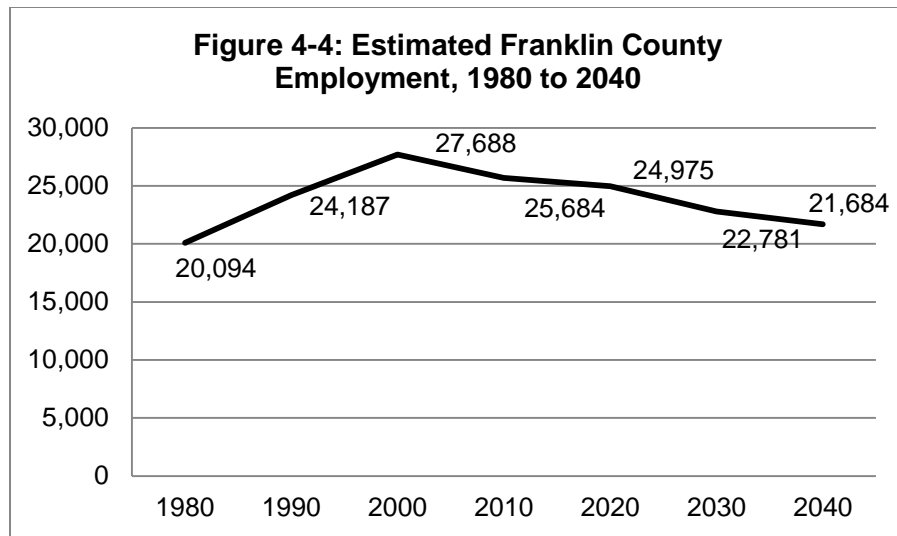
The creation of this middle mile network allows other network builders and service providers to use this network to connect to the “last mile” to serve customers. In the summer of 2014, Gov. Patrick’s administration and with the support of the state legislature included an additional \$50 million in the IT Bond Bill to support last mile infrastructure investment by the MBI in the unserved and underserved communities of western Massachusetts. The MBI is currently working with interested communities to explore how a regional network could be implemented using some of these funds as well as local contributions to be made by the participating municipalities. At the same time, the MBI is working with communities only partially served by cable to determine how this service could be extended to unserved premises. The improved internet service could attract new residents and employment to Franklin County and promote telecommuting – all of which could affect transportation infrastructure needs.

Employment Projections

Employment projections are useful for transportation planning, because they can help estimate future commute travel flows and help assess the need for transportation services and facilities for work-related travel. As with the population forecasts used in this RTP, the employment forecasts were produced by MassDOT, in partnership with the UMass Donahue Institute. The total employment in an area is equal to the number of employed residents in the area, plus the number of non-residents who commute into that area to work. Excluded from the figure are the residents who commute out of the area to work.

MassDOT provided employment forecasts for the regional and municipal level. The municipal level allocations were performed with the assumption that each town’s share of employment will remain constant over the next twenty-five years. This is based on the premise that primary employment trends are regional and the employment centers in Franklin County today will generally continue to be the employment centers in the county for the foreseeable future. While this is true, it is also likely that the communities bordering Hampshire County will most likely become bedroom communities over the next twenty-five years and see an increase in their share of the region’s employment. From an employment perspective, the most important population changes are those that occur at the regional level. Population changes for individual towns, especially smaller towns, have only a minor impact on employment since many workers commute to jobs outside of their community.

As shown in Figure 4-4, the forecasts show that Franklin County’s total employment will decline by 16 percent over the next twenty-five years. The state’s employment is projected to grow by 8 percent over the same time frame. Current employment in Franklin County stands at 25,684 and is projected to lose 4,000 employees by the year 2040.



The forecasts show that Franklin County will lose employment by the year 2040. This is largely due to the graying of the region's population as they age out of the workforce. Other regions in the state with similarly aged populations are also expected to have declining employment. They include Berkshire County and Cape Cod. In terms of planning for the transportation of commuters in the region, these forecasts seem to indicate that the current highway infrastructure is sufficient for commuters' needs. The status of the public transit system should be evaluated to ensure that it is serving the workforce efficiently and effectively. In addition, the return of passenger rail to the region should be evaluated as to how it can best serve the area's labor force as it potentially changes to a more telecommuting/long distance employment model.

Transportation Profile

Because of Franklin County's rural character and limited transit services, the county has a high level of private vehicle ownership and most of Franklin County residents rely heavily on their vehicles for travel.

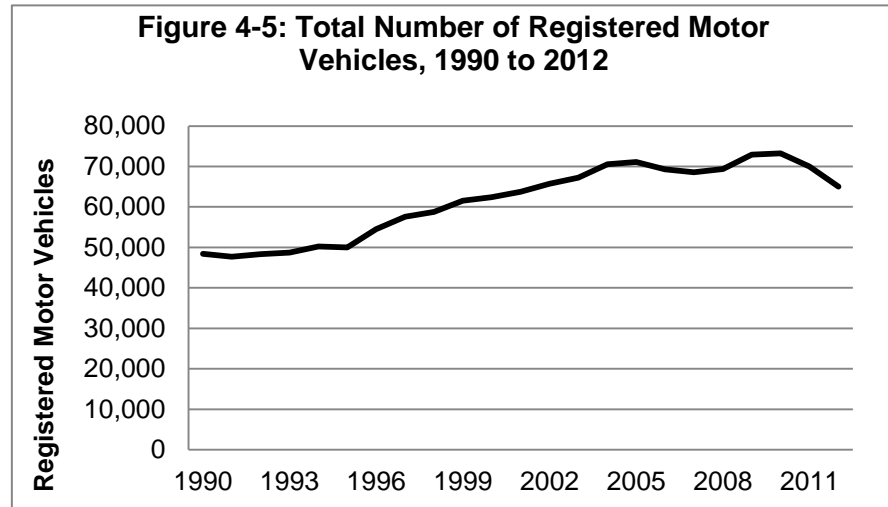
Registered Motor Vehicles

The number of registered motor vehicles has continued to grow in Franklin County at a rate faster than the population – although there have been fluctuations in that growth, which Figure 4-5 illustrates. Between 1990 and 2005, the number of registered vehicles in Franklin County increased 47 percent to a total of 71,106. However, after 2005 the number of vehicles actually declined back to approximately 2000 levels as a result of economic impacts from the Great Recession. Since the economic downturn, the number of vehicles in

the county has fluctuated. In 2013, there were approximately 65,000 total registered vehicles.⁸

Overall, during the sixteen years between 1990 and 2012, the number of registered vehicles grew by 34 percent. At the same

time, Franklin County's population only grew by 1.8 percent. The disproportionate increase in the number of registered vehicles compared to population growth suggests there is increasing motor vehicle usage in the region and a growing dependence on motor vehicles for transportation. This trend is likely to continue despite the small decline and leveling of registered vehicles that occurred from 2005 to 2012.



Households Without Cars

In 2013, 7 percent of Franklin County households (approximately 2,153 households) do not own or have access to a motor vehicle for their transportation needs, compared to 13 percent of households statewide. The Census figures show that the two population groups that are most likely to not own a car are renter households and older households. An estimated 16 percent of renter households in Franklin County have no vehicle available. The higher rate of carlessness among renters is related to two primary factors. First, most of Franklin County's rental housing is located in village and downtown areas that, because of their population density, typically have the highest degree of access to transit services. Secondly, renter households, on average, have lower incomes than homeowners and are more likely not to own a private vehicle because of the costs associated with vehicle ownership. Studies by the Bureau of Transportation Statistics (BTS) and the Surface Transportation Policy Program (STTP) have found that transportation costs are typically the second largest household expense next to housing. Low income households can be particularly burdened by transportation costs, spending a quarter of their income or more, on their travel and private vehicle expenditures. The STTP study found that switching from the use of a private vehicle to transit service can save a family thousand of dollars annually.

⁸ Massachusetts Department of Revenue, Division of Local Services, 2013.

The Census data also show that, by age group, elderly households, especially older elderly, are most likely to not have a car. In Franklin County, 21 percent of households led by householders aged 75 or older are carless. Reasons for the higher level of carless households among the elderly include physical limitations, which make driving difficult, and as discussed above, the expense of private vehicle ownership for elderly fixed-income households.

Commuting Trends

Mode of Transportation to Work

The automobile is the primary mode for commuting travel in Franklin County. In 2013, 87 percent of Franklin County's employed residents commuted to work by car; with 78 percent driving to work alone, and 8 percent carpooling. Town level data is not available, but historically many of those that worked from home lived in the more remote hilltowns of the county.

As mentioned previously, it is anticipated that the employees working from home, also known as telecommuters, will continue to increase in Franklin County in the coming decades. The growth in telecommuting will be driven by the increasing number of technology and information-based jobs that can be conducted from remote locations, such as a workers' home. It will also be driven by the number of people who move to Franklin County, but who choose to keep jobs that are based outside of the region and to which they do not need to commute to every day. Another important factor that will promote telecommuting in the region is the recent and pending expansion of telecommunications infrastructure and high-speed internet services in the region

Commute Patterns

In 2013, approximately 62 percent of Franklin County residents worked in Franklin County and the other 38 percent commuted to jobs outside the county. The majority of residents commuting to work outside Franklin County worked in Hampshire County (20%), though some worked in Worcester County (5%), Hampden County (5%), or Windham County, Vermont (2%).

Due to changes at the U.S. Census, town-level commuting patterns are no longer available. The most recent town-level data that is available for Franklin County residents commuting to jobs outside of Franklin County is the decennial 2000 U.S. Census. This data showed that the two major commuting destinations outside of Franklin County are Amherst and Northampton. According to the 2000 U.S. Census, approximately 3,600 Franklin County residents work in Amherst, and 1,900 Franklin County residents work in Northampton.

While this data is fifteen years old, these two towns remain the largest commuting destinations for Franklin County workers.

Franklin County residents have an average travel time of 24 minutes. The percentage of workers that were commuting longer distances (an hour or more) to their jobs increased between 2000 and 2008. However, since 2008, this percentage has remained the same at 6.3%.

Table 4-2: Franklin County Land Use, 2005

Land Use

The link between land use and transportation is important to consider as new transportation facilities are reviewed or the expansion of old facilities is evaluated. Transportation improvements or expansions, such as adding roadway lanes, upgrading bridges to remove weight restrictions, or establishing and expanding transit services, can themselves promote additional development and influence future development patterns.

Land Use Category	Acreage	% of Total
<i>Undeveloped Land</i>	<i>436,975</i>	<i>94.3%</i>
Forest	357,909	77.2%
Agriculture	36,072	7.8%
Open Land	8,164	1.8%
Recreation	1,716	0.4%
Water/Wetlands	33,111	7.1%
<i>Developed Lands</i>	<i>26,535</i>	<i>5.7%</i>
Residential	18,981	4.1%
Commercial/Industrial	2,178	0.5%
Urban Open*	2,072	0.4%
Transportation	2,167	0.5%
Other Developed Uses**	1,136	0.2%
Total Acreage	463,511	100%

*Urban Open land includes parks, cemeteries, public and institutional buildings, and green spaces. **Other Developed Uses include mining and waste disposal.

Source: MassGIS, 2005.

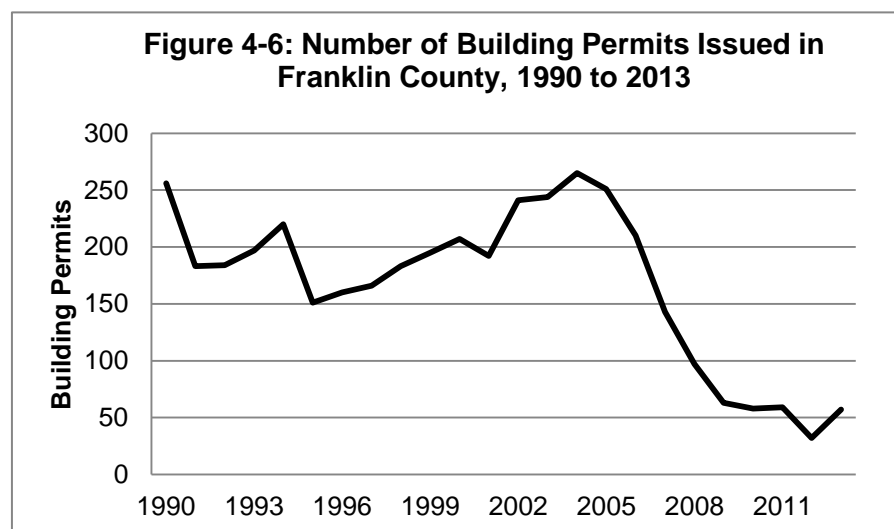
As the state's most rural region, Franklin County has experienced only a limited amount of development. Forestland is still the predominant land use, accounting for more than three-quarters (77%) of the county's acreage, and even the most urbanized towns in the county, such as Greenfield, are at least 45 percent forested. Farmland is the second largest land use, comprising 7.8 percent of the county's total land area. All developed land uses (residential, commercial, etc.) combined account for only 5.7 percent of the county's acreage. These figures are based on MassGIS 2005 mapping of land uses from aerial photographs – the most recent land use data available. The 2005 acreage by land use for Franklin County is shown in Table 4-2.

Although Franklin County is predominately undeveloped, it has experienced substantial growth and development in recent decades. Between 1985 and 1999, the amount of developed land in Franklin County increased 30 percent (7,200 acres). Most of this new

development, almost 6,600 acres, was residential in nature. In Massachusetts, new residential development can occur along road corridors with relative ease, due to the State's Approval-Not-Required (ANR) rules, which allow for the subdivision of land without Planning Board approval, if certain conditions can be met. These conditions are that each subdivided lot must meet minimum road frontage requirements and must have adequate access to protect public safety and welfare. As a result of the expansion in residential acreage from 1985 and 1999, the amount of Franklin County agricultural land decreased by 12 percent and the amount of forestland fell by 2 percent.

MassGIS updated its aerial photography and land use data in 2005. Unfortunately, due to different data collection methodology, the 2005 land use data is not directly comparable to the 1999 land use data. As a result, it is difficult to assess how land uses have changed in the six years between 1999 and 2005. It is very likely that the trend of residential growth continued during that time period based on the increase in building permits. Between 2000 and 2004, the number of new housing units in the region grew by 1,126 or 25 percent. However, growth has dramatically decreased since 2005 due to the effects of the Great Recession. In 2012, there was almost no construction activity with permits issued for a total of only 32 units. This is compared to the 265 permits issued in 2004. There are signs that the construction market is beginning to strengthen in the region and it is likely that development will pick up in the next several years – particularly as more communities gain access to broadband service. Figure 4-6 shows the change in building permit activity in Franklin County between 1990 and 2013.

Almost all of the housing units that have been developed since 2000 were single-family homes built along existing roadways, such as on ANR lots. There are currently very few subdivisions being built in the region. However, as growth in the region



continues and there is less land along existing frontage available for development, it is anticipated that more subdivisions will be constructed. These subdivisions will include new roadways to serve the new homes. These roadways will need to be maintained as either private roads by the developer and property owners, or as public roads by the communities

in which they are located. The impact of the subdivision roads on existing roadway infrastructure will also need to be assessed.

In response to development pressures and concerns about their ability to handle future potential growth, a number of Franklin County communities have recently revised their zoning bylaws to direct growth to areas within their towns with the highest current levels of development and the best infrastructure (water, sewer, roadways) to accommodate new growth. Towns have also worked to encourage other areas to remain undeveloped farmland and forestland. Land conservation organizations in the region, such as the Franklin County Land Trust and the Mount Grace Land Conservation Trust, have protected a considerable amount of private farm and forestland in the region through purchases of land and the purchases of development rights for other land parcels. As of January 2015, 33 percent of the total acreage of Franklin County has been protected from development (MassGIS).

Summary of Demographics and Socioeconomic Trends

The following are key demographic and socioeconomic trends that have significant implications for the transportation system and transportation planning within the region:

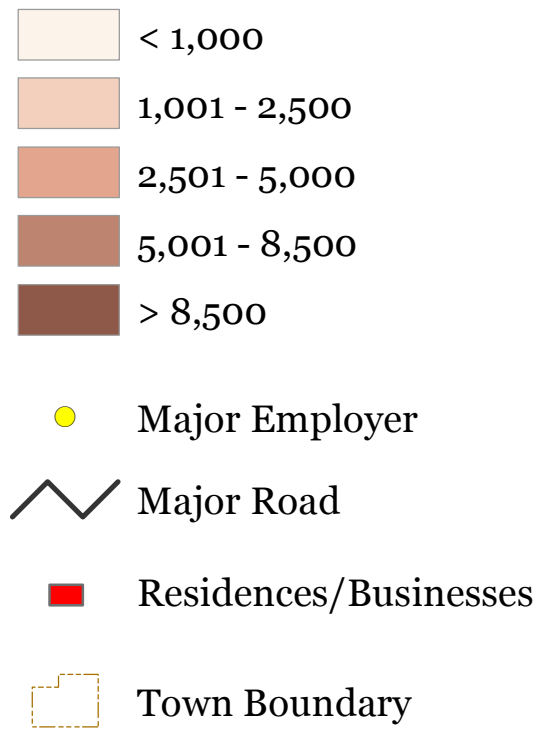
- Population size has remained relatively stable and is projected to decline slightly.
- There has been and will continue to be a high growth in the number of elderly residents.
- Labor force in the region has declined since 2008.
- There will be a growing number of telecommuters/long distance commuters.
- Employment projections show that employment in Franklin County will decline over the next twenty-five years.
- The pace of new construction has been very slow and may increase in the future, but will likely not be significant.



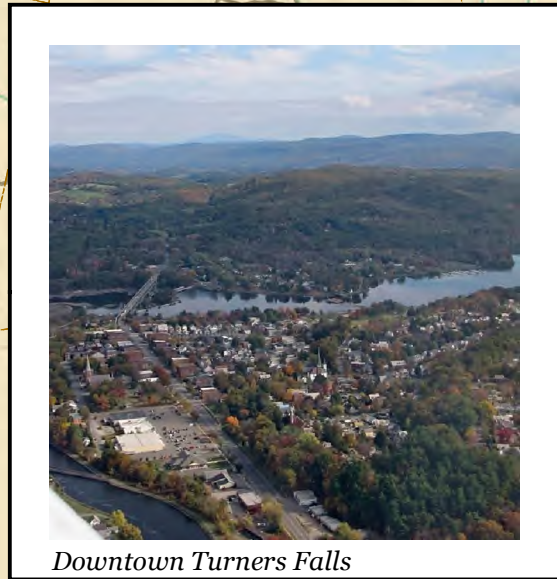
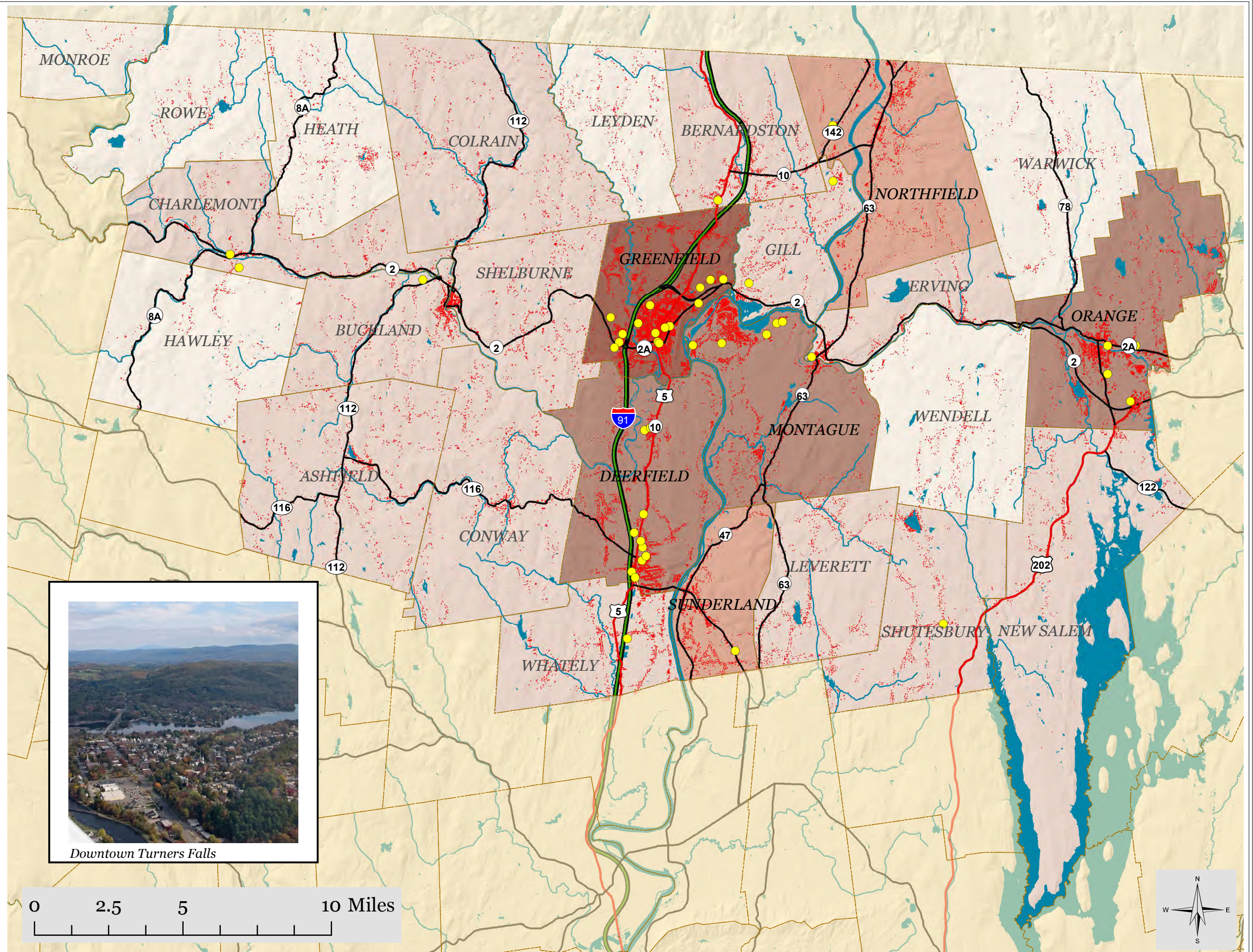
Official opening of the reconstructed Eunice Williams Covered Bridge in Greenfield.

Franklin County Massachusetts

US Census Population 2013



Sources: Map produced by the Franklin Regional Council of Governments Planning Department.
 GIS data sources include MassDOT, MassGIS and FRCOG.
 Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



Downtown Turners Falls

5

Road and Bridge Infrastructure



2016 Regional Transportation Plan

5 Roadway and Bridge Infrastructure

Franklin County has a diverse collection of transportation resources, including scenic roadways and covered bridges. A safe and efficient transportation network depends on the quality and integrity of the transportation infrastructure in the county, including roads and bridges. This chapter examines the condition of these road and bridge resources and includes an analysis of the roadway network (mileage and functional classification), traffic volumes, bridge ratings, pavement management analysis, congestion and traffic operations. The goal of this chapter is to identify existing concerns and future needs based on this analysis and public input received during the development of this plan.

Existing Conditions

Franklin County consists of over 1,700 centerline miles. The majority of these miles, 79 percent, are maintained by the Towns, while MassDOT owns and maintains 11 percent of the roads. The remaining 10 percent of the roads are owned by various other entities or classified as unaccepted. Table 5-1 details the breakdown of roadway jurisdiction within each of the municipalities.

Table 5-1: Roadway Centerline Mileage by Functional Class

Functional Classification	Total Centerline Mileage	Percentage of Total
Urban Interstate	8.9	0.52%
Rural Interstate	14.9	0.87%
Urban Principal Arterial	37.8	2.22%
Rural Principal Arterial	29.4	1.73%
Urban Minor Arterial	55.0	3.23%
Rural Minor Arterial	53.5	3.14%
Rural Major Collector	219.3	12.87%
Urban Collector	28.8	1.69%
Rural Minor Collector	113.2	6.65%
Rural Local Road	955.4	56.07%
Urban Local Road	187.3	11.00%
Total	1703.9	100%

Source: Massachusetts Department of Transportation, Road Inventory Year-End Report and Road Inventory File, 2013.

Functional Classification

Functional classification is the categorization of highways and roadways in terms of the service that the roads provide within the regional network. Additionally, functional class has both rural and urban designations based on the U.S. Census population figures. The urban boundaries are based on population figures available from the 2010 U.S. Census. All the urban areas in Franklin County are defined as large urban clusters (Census block groups with a population density of 5,000 to 50,000).

Table 5-2: Roadway Centerline Mileage by Maintenance Authority

Town	Maintenance Authority							Town Totals
	MassDOT	Town	State Forest or Park	DCR*	State Institutional	State College	Un-accepted**	
Ashfield	10.9	71.5	0.3	0	0	0	0.3	83.1
Bernardston	16.8	41.9	0	0	0	0	0.2	59.0
Buckland	6.0	43.1	0	0	0	0	1.1	50.3
Charlemont	12.0	42.7	1.6	0	0	0	0.4	56.8
Colrain	4.0	78.7	1.1	0	0	0	4.1	88.0
Conway	6.5	64.3	0	0	0	0	0.3	71.1
Deerfield	20.4	77.7	1.1	0	0	0	1.3	100.6
Erving	13.5	17.3	6.2	0	0	0	1.1	38.3
Gill	3.9	34.6	0.1	0	0	0	1.9	40.6
Greenfield	21.5	102.1	0	0	0.6	1.5	9.3	135.2
Hawley	0	44.8	3.4	0	0	0	0.2	48.5
Heath	0	52.2	1.5	0	0	0	5.8	59.5
Leverett	5.4	34.6	0	0	0	0	3.1	43.1
Leyden	0	35.5	0	0	0	0	2.5	38.1
Monroe	0	16.7	1.6	0	0	0	0.0	18.4
Montague	5.7	103.6	0.5	0	0	0	3.5	113.4
New Salem	11.9	35.7	0.2	53.8	0	0	2.2	103.9
Northfield	11.1	65.8	0.0	0	0	0	6.9	84.0
Orange	15.6	87.2	0.5	0	0	0	3.5	106.9
Rowe	0	36.0	0	0	0	0	0.3	36.4
Shelburne	9.3	49.8	0	0	0	0	0.08	59.2
Shutesbury	3.1	30.8	0	5.1	0	0	2.6	41.7
Sunderland	4.3	39.0	2.9	0	0	0	0.0	46.3
Warwick	0.01	56.0	6.6	0	0	0	1.6	64.3
Wendell	0.3	46.4	16.7	2.0	0	0	1.2	66.7
Whately	9.8	31.2	0	0	0	0	8.4	49.5
TOTAL	192.8	1340.1	45.0	61.0	0.6	1.5	62.7	1703.9

Centerline Miles refer to the linear length of a road segment. For divided highways, only the length of one side of the roadway has been counted. Source: MassDOT, Road Inventory Year-End Report 2013.

*Department of Conservation and Recreation. State parks and forests are also under the jurisdiction of DCR.

**Unaccepted Roadways consist of roads open to public travel but not formally accepted by a city or town, as well as some private ways.

The majority of roadway mileage in Franklin County, 81 percent, is categorized as rural, with the remaining 19 percent defined as urban. The breakdown of road miles in Franklin County according to functional classification is summarized in Table 5-2. A map of the roadways in the county, along with the functional classification of each roadway is located at the end of this chapter.

Funds are available for improvements and maintenance based on roadway functional classification. All interstates and arterials are eligible for federal funds; all urban collectors and rural major collectors are also eligible; rural minor collectors and local roads are not eligible for federal funds. Approximately 26 percent of the roads in Franklin County's road network are eligible for federal funds per roadway functional classification. The remaining 74 percent of the county's roads are rural minor collectors or local roads and depend on local funds and Chapter 90 funding from the State for improvements and maintenance.

Traffic Volumes and Growth Trends

In Franklin County, traffic volume data has been collected at almost 800 different locations since 1991, the majority of which have been collected by the FRCOG and MassDOT. The FRCOG maintains a database of this traffic volume data and makes it available online through MassDOT's Transportation Data Management System.

Traffic volumes on Franklin County's roadways vary from over 25,000 vehicles per day on sections of Interstate 91 to less than 100 vehicles per day on a number of local roadways. The most heavily traveled roadway in Franklin County is Interstate 91 where Average Annual Daily Traffic (AADT) volumes range from approximately 32,000 vehicles per day in Whately to less than 18,000 vehicles per day through Bernardston. Along Route 2, AADT volumes vary between 17,000 vehicles per day near the Greenfield Rotary to less than 1,300 vehicles per day through parts of Charlemont. Other high volume corridors include Route 116 in Sunderland and Route 5/10 in Whately, with traffic volumes near 15,000 vehicles per day.

Using a sampling of data collected between 2011 and 2014 at 20 locations throughout the county, annual traffic growth was examined and an average growth rate (AGR) for traffic was estimated. There was significant variation in volume growth by location, with some locations showing increased traffic and some showing reduction in traffic volume over the same 4 year period. The overall AGR for the sample showed a decrease in traffic volume of 2.7 percent.

Bridges

Bridges are a critical component of the Franklin County roadway network. Maintaining the safety and functionality of bridges in Franklin County is a top priority. The majority of bridges

located on high volume roadways are predominantly under the domain of the State and are inspected by MassDOT and ranked according to standards established by the American Association of State Highway and Transportation Officials (AASHTO). The purpose of the AASHTO rating is to provide a standard to compare the status of bridges in a region and across the country. Many factors are considered when developing the rating of a bridge, such as its structural integrity, the road's functional classification, the designed purpose of the bridge, etc. The AASHTO rating may allow some generalized assumptions, however, because so many factors are rating determinants it is important to research each bridge individually for specific information. Bridges may be further classified as *structurally deficient* (SD) or *functionally obsolete* (FO). Each of these classifications can increase the priority of repair or replacement of the bridge. According to federal aid Bridge Program guidelines, for a bridge to be eligible for rehabilitation it must both be deficient and have an AASHTO rating of 80 or less; and for a bridge to be eligible for replacement it must have an AASHTO rating of less than 50.

MassDOT maintains a listing of all bridges that meet the National Bridge Inventory (NBI) criteria set by FHWA. This criteria identifies bridges that are publicly owned highway bridges longer than twenty feet located on public roads. Railroad and pedestrian bridges are not included in the NBI, nor are bridges that have been closed for more than 10 years. Bridges that are not listed in the NBI are not eligible to receive Federal bridge replacement funding¹. This bridge listing includes the year the bridge was built or rebuilt, the AASHTO rating from the most recent bridge inspection, and whether the bridge is structurally deficient or functionally obsolete. Information on Franklin County bridges and their current classification are shown in a map at the end of this chapter.

Bridges are considered structurally deficient if they fall below specific thresholds. These bridges may span a range of conditions, from requiring a minor, but vital, repair to a more complete rehabilitation. As with all bridges in the Commonwealth, safety concerns are paramount. If a bridge is in need of significant repair to maintain current traffic volumes and vehicular weight, then that bridge should be high on the priority list. Statewide, priority for funding is given to structurally deficient bridges.

Bridges may also become functionally obsolete. Functionally obsolete refers to a bridge's inability to fully support the roads they serve due to variables such as limited width or height even though the bridge itself is structurally sound. Such a determination is based on the current operating capacity of the bridge. This bridge classification helps identify areas where

¹ <http://www.fhwa.dot.gov/bridge/nbis/#10>

mobility may be decreased as a result of the bridge. For example, if a four-lane roadway leads into a two-lane bridge, some level of congestion is expected as a result of the decreased capacity. While the bridge may be structurally sound, the issue lies in the capacity of the bridge to carry traffic. Functionally obsolete bridges may not present a safety

hazard, but may contribute to overall congestion. This bridge classification category can be used to identify problem areas in the transportation network.

There are a total of 298 bridges in Franklin County that are on the NBI, according to the 2014 MassDOT Bridge Inventory. In order for a bridge to be eligible for rehabilitation it must be deficient and have an AASHTO rating of 80 or less. There are 83 bridges (28 percent of total) in Franklin County that are eligible for rehabilitation according to this threshold. Furthermore, 38

Table 5-3: NBIS Bridge Condition, per Town

Town	Bridge Condition			Total Bridges
	Functional	Functionally Obsolete	Structurally Deficient	
Ashfield	10	1	0	11
Bernardston	12	0	3	15
Buckland	12	2	4	18
Charlemont	23	3	3	29
Colrain	20	1	3	24
Conway	13	4	2	19
Deerfield	9	2	5	16
Erving	6	2	2	10
Gill	2	0	2	4
Greenfield	32	10	5	47
Hawley	9	0	1	10
Heath	2	0	3	5
Leverett	4	3	3	10
Leyden	1	0	0	1
Monroe	2	0	2	4
Montague	9	5	4	18
New Salem	1	0	1	2
Northfield	11	1	0	12
Orange	12	0	3	15
Rowe	3	1	0	4
Shelburne	3	0	1	4
Shutesbury	0	0	0	0
Sunderland	1	0	0	1
Warwick	3	0	0	3
Wendell	1	0	0	1
Whately	14	1	0	15
County Totals	215	36	47	298

bridges (13 percent of total) meet the requirements for replacement with an AASHTO rating of less than 50. A total of 47 bridges in the county are formally classified as structurally deficient and an additional 36 bridges are formally classified as functionally obsolete. Table

5-3 presents an overview of the bridge condition for NBI bridges in Franklin County, by municipality.

Several other types of bridges are located throughout the county in addition to those bridges listed on the NBI. The jurisdiction of these bridges ranges from private ownership to being municipally owned. Additional bridge categories include bridges such as pedestrian bridges, culverts and railroad bridges. While MassDOT is responsible for the inspection of all NBI bridges only, MassDOT also maintains an inventory of all other bridges in the state.

In addition to data provided by MassDOT, the FRCOG also collected qualitative data from Franklin County residents as part of the Regional Transportation Plan Update. When asked to indicate their transportation concerns for their community and for the County, 87.5% of survey respondents indicated that road and bridge conditions and maintenance were of high or medium concern. Additional comments from the respondents indicate that bridge conditions are the primary concern.

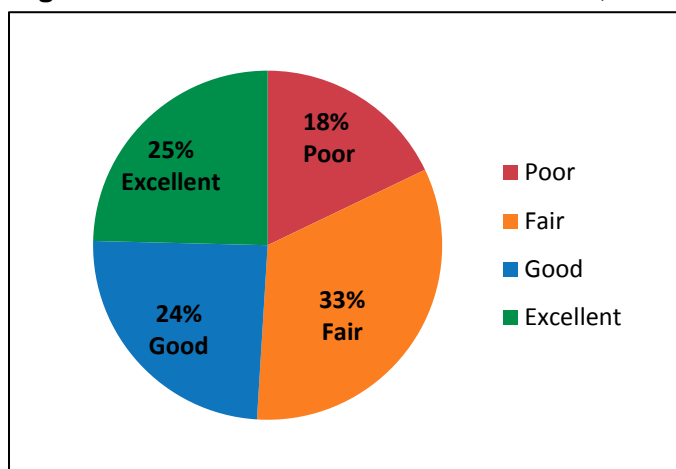
Pavement Management Analysis

A Pavement Management System (PMS) is a planning tool that collects and monitors information on current pavement conditions, evaluates and prioritizes alternative maintenance, rehabilitation and reconstruction (repair) strategies, according to the Federal Highway Administration (FHWA). In Franklin County, it is important to develop a PMS for the region because pavement is such a significant capital investment and a critical component of our transportation infrastructure.

MassDOT and the FRCOG each have a history of conducting pavement management analyses throughout the county. Franklin County has a total of 447.88 miles of roadway that are eligible for federal funding. Of the federal-aid eligible roadways, 58 percent are under town jurisdiction, with the remaining 42 percent maintained by MassDOT. Pavement condition data has been collected by MassDOT for 54 percent of the federal-aid eligible roadways in the county using specialized data collection equipment. A special testing vehicle, the Automatic Road Analyzer (ARAN) collects pavement condition data and rates the pavement condition according to the Pavement Serviceability Index (PSI) on a 5 point scale. Based on this scale, roadway conditions are classified as poor, fair, good, or excellent.² From the roadways that have been surveyed by MassDOT, pavement condition has been estimated for the region and is shown in Figure 5-1.

² MassDOT. FFY 2011 – 2015 Capital Investment Plan. September 2010.

Figure 5-1: Pavement Condition Estimates, 2013



As shown in Figure 5-1, the majority of roadways surveyed are assessed as in good or excellent condition (25% excellent, 24% good). Approximately 33 percent of roadways are in fair condition and 18 percent of roadways are in poor condition.

In order to calculate the anticipated costs of repair and maintenance to bring roadways up to an excellent rating, the

data collected by MassDOT on a sample of federal aid roadways in the county was analyzed using cost estimates derived by neighboring regional planning agencies, including Pioneer Valley Planning Commission, Berkshire Regional Planning Commission, and Montachusett Regional Planning Commission. Estimated maintenance and repair costs are shown in Table 5-5 for three maintenance strategies. These costs are approximate as they are based on an estimated condition of the regional pavement system as well as projected cost estimate figures.

It is unrealistic, due to limited financial and physical resources, to bring all roadways in the county to excellent condition at one time. Furthermore, it is important to note that even as roadways reach excellent condition, they will still need to be maintained in order to prevent deterioration. It is necessary to prioritize pavement management needs throughout the county and balance this with cost and safety considerations. This is further complicated by the fact that the relationship between pavement condition and cost is not linear. For example, the strategy that often seems the most logical (repair the worst roads first), is actually the least cost effective. Research has shown that is far less expensive to keep a road in good condition than it is to repair once it has deteriorated. As roadway conditions worsen, the costs of repairs increase significantly. A roadway that has in poor condition has already reached a point where it cannot be repaired using low-cost treatments, while a roadway in good condition can be maintained that way. Table 5-5 shows that the most cost-effective maintenance strategy is “A: Stop Further Deterioration.” This strategy proposes maintaining roadways that are currently in

Table 5-5: Pavement Management Repair Cost Estimates – Existing Conditions			
Maintenance Strategy	Years	Description	Estimated Cost
A: Stop further deterioration	1-5	Bring roadways in good and fair condition to excellent condition; maintain roadways in excellent condition.	\$24,225,955
	6-10	Bring roadways in poor condition to excellent condition; maintain roadways already in excellent condition.	\$28,762,115
	Total		\$52,988,070
B: Repair the best roadways first	1-5	Bring roadways in good condition to excellent condition; maintain roadways in excellent condition.	\$6,941,793
	6-10	Bring roadways in poor and fair condition to excellent condition; maintain roadways already in excellent condition.	\$50,301,325
	Total		\$57,243,118
C: Repair the worst roads first	1-5	Bring roadways in poor and fair condition to excellent condition.	\$40,364,351
	6-10	Bring roadways which have deteriorated to good and fair condition to excellent condition; maintain roadways already in excellent condition.	\$23,898,519
	Total		\$64,262,870

excellent and good condition and try to also prevent further deterioration of roadways in fair condition and bring those up to excellent condition as soon as possible.

The FRCOG continues to work on implementing a PMS for Franklin County. Pavement condition surveying has begun and several software analysis tools have been tested. The selected software tools will be in place late in 2015. Federal aid eligible roadways in Franklin County will be continually monitored and surveyed on a three-year rotating basis. A database with the results of the surveying will be maintained and a regional report will be regularly produced that summarizes the status of surveyed roadways. The implementation of a PMS in Franklin County is intended to help provide more accurate and detailed information that can be used to determine priority ranking and cost effective repair and maintenance strategies for roadways in the region.

Sign Retroreflectivity

The Federal Highway

Administration (FHWA) has issued federal requirements for public roads on a variety of topics, including signage. These federal requirements for sign standards are derived from the *Manual on Uniform Traffic Control Devices (MUTCD)* and apply to all public roads. These standards are in

place to promote the safety and efficiency of public roads by informing motorists of regulations, warning them of potential hazards, and helping ensure that motorists reach their destinations as safely and efficiently as possible.³



View of Route 63 in Montague

In 2009, the FHWA provided new sign retroreflectivity requirements for all agencies (including towns and cities) that maintain roadways open to public travel. Retroreflectivity is the property of a traffic sign to reflect light back to the driver at night. Highly retroreflective traffic signs are more legible at night. Meeting the new signage retroreflectivity requirements is the responsibility of each town or city.

These guidelines establish minimum retroreflectivity levels. If a sign falls below this minimum value, it needs to be replaced. It is in the best interest of agencies to adhere to this requirement not only due to potential federal funding implications but also with regards to liability. The FHWA states that public agencies that demonstrate a reasonable maintenance policy, as outlined in the new regulations, should be better equipped to successfully defend against tort litigation involving claims of improper sign retroreflectivity. In short, these standards aim to improve traffic safety in all cities and towns during nighttime driving conditions.

The FHWA enacted final rules regarding minimum retroreflectivity levels in 2012. All agencies were required to have a plan to maintain sign retroreflectivity at or above the minimum levels presented in the MUTCD by January 2014.

³ Federal Highway Administration (FHWA), *Sign Retroreflectivity Guidebook: For Small Agencies, Federal Land Management Agencies, and Tribal Governments*, September 2009.

The FRCOG provided assistance to multiple Franklin County towns in developing sign retroreflectivity maintenance plans, including selection of a retroreflectivity assessment method. The plans include procedures for assessment, creation of a sign inventory, a sign replacement plan, an implementation timeline, and cost estimates. Participating towns included Deerfield, Greenfield, Monroe, Montague, New Salem, Sunderland, Warwick, Wendell, and Whately.

Traffic Studies

Deerfield Elementary School Traffic Circulation and Flow Study

In 2013, The Town of Deerfield requested the FRCOG evaluate traffic operations at the Deerfield Elementary School and Pleasant Street (the access road to the school). The study examined pedestrian safety and traffic circulation during morning pick-up and afternoon drop-off periods and included recommendations for improvements based on best practices for traffic operations at schools.

STOP Sign Compliance Study

A study was conducted in 2013 to evaluate intersections with suspected traffic control device compliance issues. The locations were identified through previous planning studies conducted in the region and by surveying local Police Departments. The report focused on four specific locations where STOP sign compliance has been identified as a safety issue and included recommendations to improve compliance with existing traffic controls.

Identification of the Most Hazardous Intersections in Franklin County

Approximately every three years the FRCOG analyzes crash data from the Registry of Motor Vehicles for the twenty-six communities in Franklin County to identify intersections that have experienced a repeated occurrence of crashes. The study identifies the fifty most hazardous intersections and ranks them based on a calculated crash rate that takes into account the severity of each of the crashes, as well as the exposure to crashes based on traffic volumes. The most recent study was completed in 2012 and reviewed crash data from 2007 through 2009. This study is described more thoroughly in Chapter 13 – Transportation Safety. An update of the report, using the next set of available data, will be completed in 2016.

Road Safety Audits

The Road Safety Audit (RSA) process is an effective tool for improving traffic safety at specific locations and is a measure that has been supported for many years by MassDOT and the FHWA. Since the implementation of the multi-disciplinary RSA process in Franklin County in 2010, RSAs have been conducted at nineteen locations in the region. More details about RSA activity in Franklin County are provided in Chapter 13 – Transportation Safety.

Planned and Completed Roadway Improvement Projects

Route 2 Safety Improvements

Since the formation of the Route 2 Task Force in 1994, the FRCOG has been working together with the communities along the Route 2 corridor from Phillipston to Greenfield to create a safer roadway. More than \$70 million has been invested in constructing safety improvements along the corridor. The first improvements included numerous upgrades such as the installation of shoulder rumble strips, new signs and lines, tree clearing for improved visibility, and the installation of variable message signs. The first major construction project was the realignment of Route 2 around the Erving Paper Mill creating a safer climate for both through travelers of the roadway and the mill's loading docks. This work was followed by the construction of a climbing lane, intersection improvements, and a truck weigh station in Athol. This work included installation of an innovative centerline treatment called "Qwick Kurb" along 13 miles of highway in Philipston and Athol. Next was the reconstruction of two bridges and lowering the profile of Route 2 in the Erving area of Erving, along with the construction of protected turn lanes, acceleration and deceleration lanes, and traffic flow improvements in the Erving neighborhoods near the French King Bowling Alley. Improvements in Orange that included intersection and climbing lane improvements, as well as rehabilitation of the Route 122 Bridge, were completed in 2012. Improvements at the intersection of Route 2 and Route 2A in Erving are scheduled for construction in 2016 and designs for improvements in Erving Center and Farley are under development. Improvements in the Gill/Greenfield section are currently being completed as part of the rehabilitation of the Gill-Montague Bridge and additional improvements for this area are in the preliminary planning stage. More detailed information about the Route 2 Safety Improvements and the Route 2 Task Force can be found in Chapter 13 – Transportation Safety.

Greenfield Mountain Climbing Lane

In the 2009 *Route 2 West Safety Study*, it was recommended that a climbing lane be added to the westbound lane of Route 2 over Greenfield Mountain approaching Shelburne. The study concluded that there is enough pavement width on the roadway to accommodate a climbing lane, but not enough to have a desirable shoulder width. MassDOT has restriped the pavement markings and added signs on this section of Route 2 to allow trucks to travel in the shoulder while climbing. FRCOG conducted a follow-up study in 2013 to determine how well these changes were functioning. The study showed that the widened shoulder is working effectively and safely as an informal "climbing lane."

Roundabout at Greenfield Community College (GCC) and Colrain Road

The intersection of Colrain Road and College Drive in Greenfield is located at the entrance to Greenfield Community College (GCC) and has experienced delay and safety challenges.

MassDOT worked with the City of Greenfield to develop improvements to this intersection,

which include the creation of a roundabout. The construction of the roundabout was completed in the spring of 2015, improving safety and traffic circulation.



Roundabout at GCC and Colrain Road in Greenfield

Greenfield Road Improvements

The reconstruction of Greenfield Road in Montague consists of roadway reclamation and minor widening of approximately 2 miles from near Sherman Road south to Hatchery Road. Major elements of the project will improve safety at the intersection of Randall Road (site of a fatal crash), will widen shoulders to improve bicycle accommodation on this segment of the Franklin County Bikeway, and will ultimately connect to a new bicycle and pedestrian bridge under design for south of Hatchery Road. The reconstruction project began in 2014 and is expected to be completed in 2016.

Route 2 in Charlemont

MassDOT and the FRCOG have been working together for several years to make improvements to Route 2 in Charlemont. MassDOT identified seven culverts along this corridor that were originally constructed in the early 1900's that were approaching the end of their design life. Several of these also suffered damage from Tropical Storm Irene in 2011. Since 2010, five culverts have been replaced and two have been repaired. MassDOT also plans to replace the Trout Brook (repaired in 2012) culvert in a future project. A project to reconstruct Route 2 from Route 8A south to Route 8A north is eligible for funding in 2017. This project will also construct improvements in the village center with repair of existing

sidewalk and construction of new sidewalk, as well as traffic calming measures, including crosswalk enhancements and landscaping and signage gateway treatments.

Recommendations for Road and Bridge Infrastructure

- Monitor data for roadway safety and infrastructure performance measures.
- Continue to staff the Route 2 Task Force and advocate for advancement of additional safety improvements.
- Continue to implement a Pavement Management Program.
- Update the Most Hazardous Intersections report using the next set of available data.
- Continue conducting Road Safety Audits and support projects to address safety issues in the region.

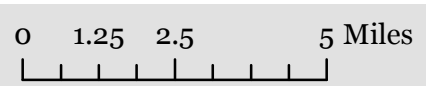


Repaving of a Franklin County roadway.

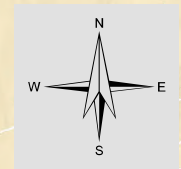
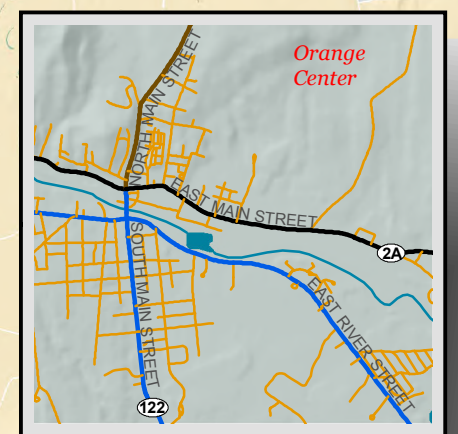
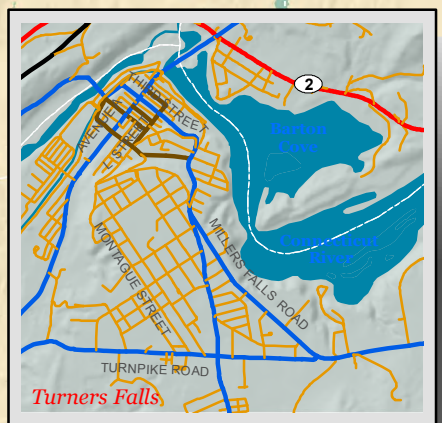
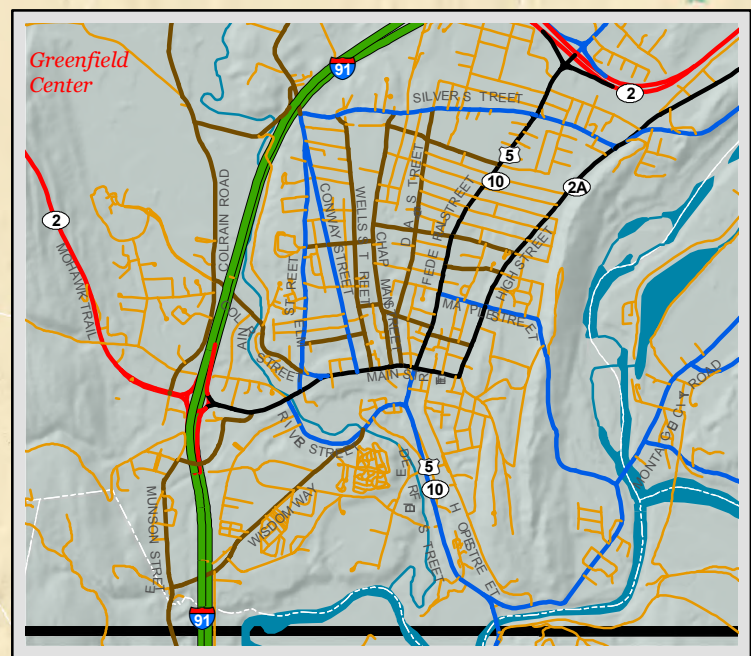
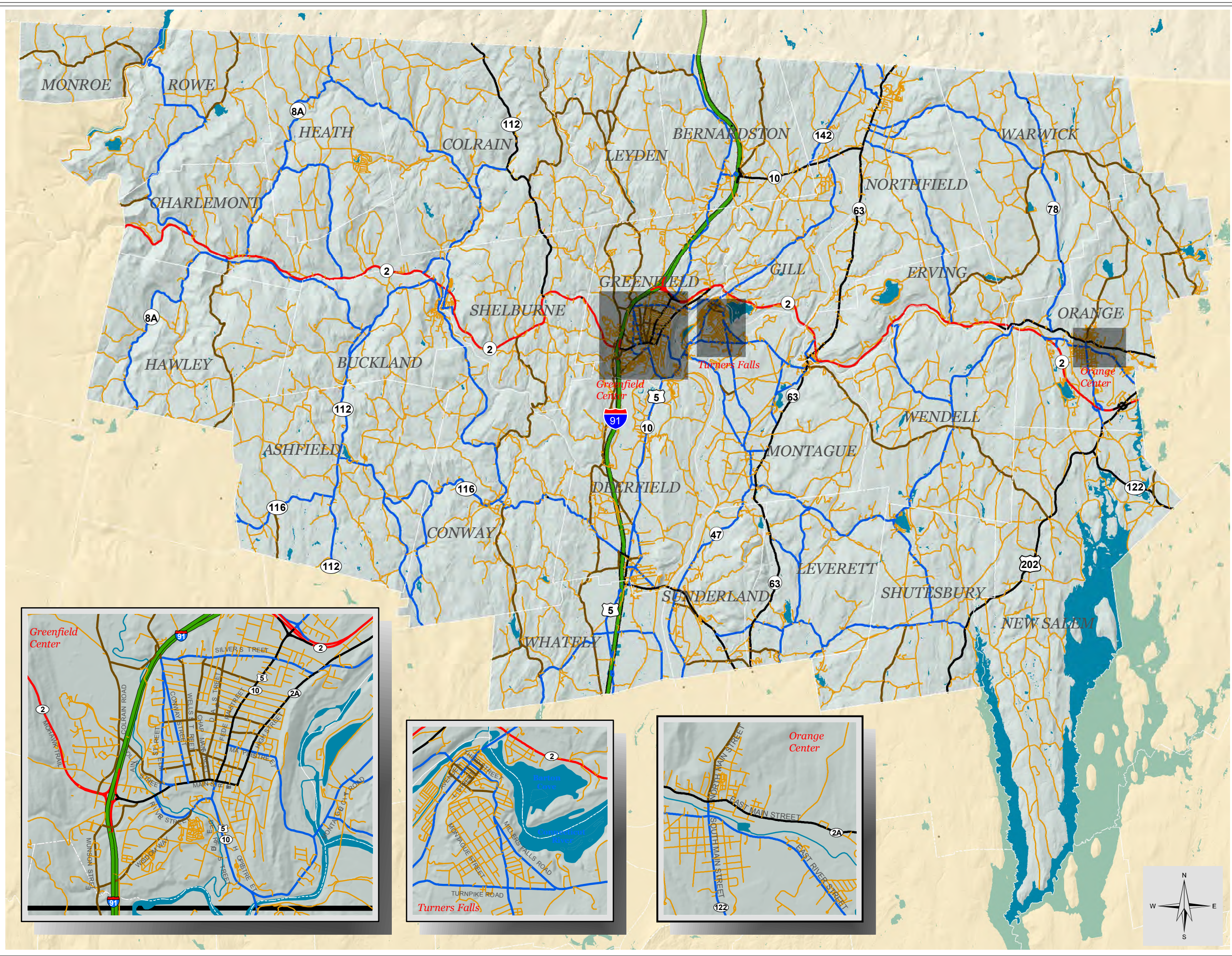
Franklin County Massachusetts

Functional Classification Road Inventory File 2013

- Interstate
- Principal Arterial
- Rural Minor Arterial
- Rural Major Collector
- Rural Minor Collector
- Local
- Town Boundary



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



Franklin County Massachusetts

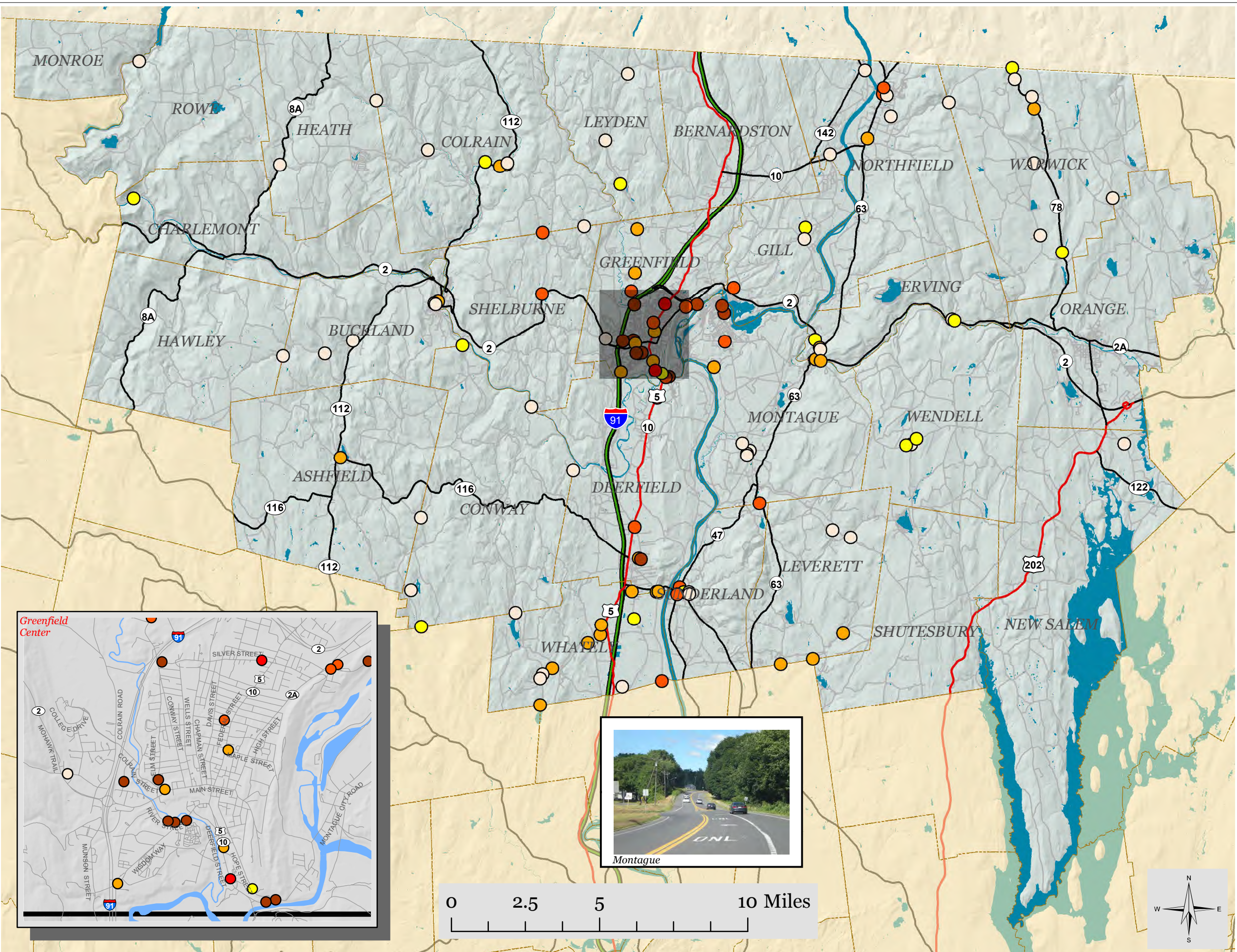
Average Annual
Daily Traffic
2012 - 2014

- 0 - 500 VPD
- 501 - 1,000 VPD
- 1,001 - 2,500 VPD
- 2,501 - 5,000 VPD
- 5,001 - 8,000 VPD
- 8,001 - 11,000 VPD

*VPD - Vehicles Per Day



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



Franklin County Massachusetts

Bridge Locations

American Association
of State Highway
Transportation Officials
(AASHTO) Rating*

- 1 - 50
- 51 - 75
- 75 - 100

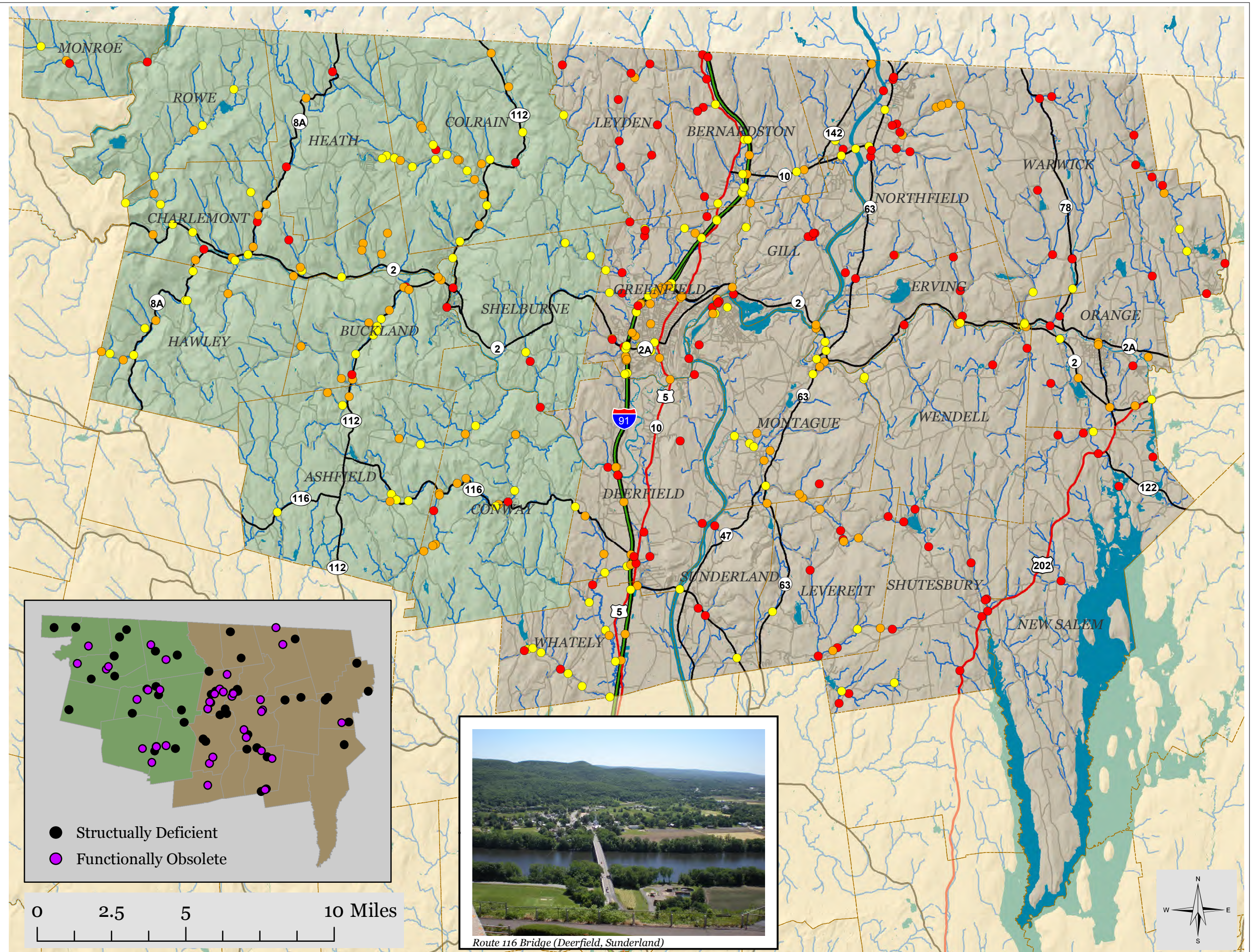
* the higher the AASHTO rating, the
better condition of the bridge

MassDOT District

- District 1
- District 2



Sources: Map produced by the Franklin Regional
Council of Governments Planning Department.
GIS data sources include MassDOT, MassGIS and FRCOG.
Depicted boundaries are approximate and are intended
for planning purposes only, not to be used for survey.



Route 116 Bridge (Deerfield, Sunderland)

6

Freight Transport



2016 Regional Transportation Plan

6 Freight Transport

Freight transportation is an important issue for Franklin County. The accessibility and efficiency of freight transport plays a vital role in the economy and viability of the region. Most of the freight and goods coming to and from Franklin County are being transported by truck; however, a significant amount of freight that travels through the county is being hauled over its three main rail lines. This chapter will discuss freight transport to, from, and through the region by truck, rail, and air. This chapter will consider opportunities to improve the safety and efficiency of freight movement in the region and will also discuss the transport of hazardous materials in Franklin County.

Current Plans

Massachusetts completed a *State Freight and Rail Plan* in September 2010 that comprehensively examines the state's freight transportation system. This Plan looks at all modes of freight transportation and analyzes issues and opportunities for growth. The Plan notes the significance of the freight transportation links that exist in Franklin County and identifies recommendations for both the region and the state, which are incorporated into this chapter. The Plan estimates that total freight volumes in Massachusetts are projected to increase 70 percent by the year 2030. This large increase could have a significant impact on Franklin County with its major highway routes and railroad lines.

In 2013, the FRCOG conducted an assessment of the movement of goods in the region. This, *Overview of Freight Movement in Franklin County*, examined the current state of freight movement in the region and outlined the potential challenges and opportunities faced by freight in Franklin County. It found that as freight shipping increases in the future, special attention should be paid to the impacts of that on adjoining land uses with respect to potential negative effects from emissions, noise, and the transport of hazardous materials. These impacts apply to both roadway and rail freight shipping.

Existing Conditions

Major Freight Modes

Trucking

Currently, 87% of all freight movement in Massachusetts occurs by truck. Although there is no county-specific data available, this statistic is most likely higher for the Franklin County region which is more rural and as a result relies more heavily on trucking, especially for the “last mile” of delivery. The major trucking corridors in Franklin County are: Interstate 91 (which runs north-south) and Route 2 (which runs east-west). These two highways also

represent the busiest travel corridors in the region for non-commercial traffic. Other active truck routes in the region include Routes 5/10, Route 47, Route 116, Route 63, and Route 112. There are several truck parking facilities on most of the major routes in Franklin County. There are parking facilities located on Route 2 West (Charlemont, MassDOT Park & Ride), Route 2A (Greenfield, MassDOT Visitors Center), Route 116 (Sunderland), I-91 (Bernardston and Whately), and Route 5/10 (Whately). The Whately facility is located at the Whately Diner on Rt. 5/10, which is a full amenity truck rest stop with parking, refueling, showers, and food available.

Freight Rail

Franklin County has approximately 93 route miles of railroad, which are broken down into two north-south routes, one east-west route, and an east-west connector at the East Deerfield Rail Yard. This rail yard is one of the largest rail yards in New England. The map at the end of the chapter shows the location of the East Deerfield Rail Yard and the different railroad lines in Franklin County. There are two other active minor rail yards in the county in South Deerfield, Shelburne Falls, and Millers Falls.

Air Transport

There are two public airports in Franklin County, located in the Towns of Orange and Montague; however, neither of these airports provide air freight service. The closest locations for freight transport are Bradley International Airport, located near Hartford, the Worcester Regional Airport in Worcester, and Logan International Airport in Boston. New York City's major airports – LaGuardia Airport, J.F.K. Airport, and Newark Airport – also provide air freight services and are used by some shippers in the Franklin County region.

Freight Trucking

In order to provide safe and efficient transportation routes for trucks to and through the region, it is important that the region's infrastructure and systems are continually evaluated for possible deficiencies or constraints. The following projects are major improvements that have been planned or have been recently completed with the goal of advancing the safety and efficiency for both general and freight highway transport.

Route 2 East Improvements

Several major improvements have taken place or have been planned for Route 2, the major east-west trucking corridor in Franklin County. Route 2 East refers to the stretch of Route 2 from Greenfield to Philipston. Several projects along this section have been recently constructed, are underway, or have been designed. These improvements focus on overall traffic safety and efficiency, as well as the relationship between freight trucking and non-commercial traffic.

One major Route 2 East project that has been completed was the relocation of Route 2 away from the Erving Paper Mill in Erving. The relocation was necessary to relieve the on-road blockage that occurred when freight trucks were loading or unloading at the mill.



Trucks on Route 2 in Gill.

Other recent improvements on

Route 2 East include the addition of climbing lanes and turning lanes to improve the roadway's safety. Two bridges were also reconstructed in Ervingside, with the road profile lowered to improve sight distance. Additional turning lanes and traffic flow improvements are planned for Farley and Erving Center and are currently under design.

Another major improvement project that has been completed is the creation of a truck weigh station on Route 2 westbound in Athol. This is the first weigh station along the Route 2 corridor. The presence of the weigh station will help ensure that freight trucks on Route 2 are not carrying excessive weight that could potentially cause safety issues.

Route 2 West Improvements and Studies

Improvement projects have also been completed, designed, or explored for Route 2 West, which in Franklin County spans from Greenfield to Charlemont. A number of issues related to the safe and efficient movement of freight by trucks on Route 2 West have been identified. Improvements have taken place to address some of these issues, but further exploration and funding is needed to address all of the identified problems.

Along Route 2 West in Charlemont, there were three bridges that needed either replacement or rehabilitation. Due to their poor conditions, all three had weight restrictions that limited their use by heavy freight trucks. These projects have now been completed with designs to ensure safe passage for freight trucks and other vehicles.

Another major improvement project along Route 2 West that has been completed is the redesign of the Route 2 Rotary. The improvements were aimed at addressing safety issues,

including trucks crowding out other vehicles on the rotary. The project also redesigned Route 2 at Colrain Road, just west of the rotary, to facilitate trucks turning onto Colrain Road and to add pedestrian facilities. Recent studies have shown that this project has been a large success in terms of safety.

In the 2009 *Route 2 West Safety Study*, FRCOG recommended that a climbing lane be added to the westbound lane of Route 2 over Greenfield Mountain. Slow-moving traffic (usually freight trucks) going up Greenfield Mountain on Route 2, which has one lane in each direction, often used the roadway shoulder as a second travel lane. However, the shoulder was not wide enough to accommodate tractor-trailers, leaving these large trucks to straddle both the breakdown lane and travel lane, creating a hazardous situation as the faster moving vehicles in the travel lane were forced into the oncoming lane in order to pass. In 2012, MassDOT widened the shoulder to allow slow-moving trucks to pull fully onto the shoulder to act as an informal climbing lane and posted signage saying “Slower Trucks Use Shoulder.” In 2013, the FRCOG evaluated the effectiveness of these changes and found that it does improve safety along this stretch.

Additionally on Greenfield Mountain, there has been concern about safety issues related to trucks traveling eastbound down the mountain towards the congested commercial area just prior to the rotary. This section of Route 2 has a steep 6 percent grade and the concerns were related to trucks’ ability to safely brake before the congested area. The *Route 2 West Safety Study* recommended that ITS (Intelligent Transportation Systems) be installed on Route 2 eastbound coming down the mountain to warn freight truck drivers if they are at risk of overheating their brakes as they travel down the incline.

Challenges to Freight Trucking

Aside from Route 2, there are other locations in Franklin County that present challenges to freight trucking and may need improvements. Listed below are a few specific constraints associated with freight trucking in the region:



A tractor trailer stuck under the Bank Row underpass.

- Bank Row, Greenfield: There is a clearance problem with the train overpass. Freight trucks are forced to avoid this central artery to downtown Greenfield. An overheight vehicle detection system could alert truck drivers to take an alternate route before they reach the overpass. This site has not yet been identified as a priority bridge improvement.
- Turners Falls Road, Montague: Trucks traveling north on Turners Falls Road have difficulty turning onto Turnpike Road. This intersection has not yet been planned for improvements.
- Montague City Road and Cheapside Street intersection, Greenfield: There is a low bridge at the curve where Montague City Road and Cheapside Street intersect. The low bridge limits truck access to the nearby industrial area, and as a result, trucks often need to use long alternative routes. Options such as raising the bridge or lowering the road would pose significant challenges. Another option is widening the sharp curve. This intersection needs further study before improvements can be planned.
- General Pierce Bridge, Greenfield: This bridge is currently under preliminary design for a major rehabilitation. Local trucking companies have expressed concern with the current weight limit on this bridge, which is 36 tons. For larger trucks that exceed this, they must use an alternate route on Mountain Road, which was not designed for large trucks. To resolve this conflict, there are two options. The first is to raise the railroad bridge on Cheapside Street to 13'6." The other option is to increase the weight limit on the General Pierce Bridge, when it is rehabilitated, to 49 tons.
- Iron Bridge, Shelburne Falls: The historic iron bridge separating the towns of Shelburne and Buckland in Shelburne Falls is a historic bridge that was rehabilitated in 1997. Its low clearance prevents larger trucks from accessing the Buckland side of Shelburne Falls from Route 2/Maple Street. Trucks must travel further west on Route 2 and enter Buckland via State Street to avoid being stuck at the Iron Bridge. An overheight vehicle detection system, supplemented by better signage and better information provided by GPS companies are needed to help freight trucks access the correct side of Shelburne Falls by the correct exit from Route 2.

Scenic Byways

Another issue related to freight transport involves the region's many scenic byways and the fact that these scenic byways are located on roadways that also serve as major trucking routes. There are five designated scenic byways that run through the county. Scenic byways

represent travel corridors with unique scenic, cultural, and tourism value. Although no significant changes in freight trucking routes are recommended at this time, the special characteristics of scenic byways needs to be taken into consideration when planning improvements for these roadways. For more information on Franklin County's scenic byways, please refer to Chapter 11: "Scenic Byways and Tourism."

Transportation of Wide Loads

The increasing interest of renewable energy powered by wind has a potentially significant impact on the type and number of wide loads passing through the region. Franklin County, especially the western portion of the county, and neighboring Berkshire County are rich in wind resources. The wind turbines are constructed on-site with very large prefabricated components ranging from 115 to 160 feet in length and must be transported via roadway to often remote areas. For comparison, the average 18-wheeler tractor-trailer ranges in length from 70 to 80 feet in length from the front of the cab to the end of the trailer.

Many of the wide-load trucks cannot be accommodated on most roads in Franklin County, or much of New England. The wide loads are larger than one lane width and therefore can crowd other vehicles, forcing them aside as they pass through. The Commonwealth of Massachusetts Commercial Motor Vehicle Center is responsible for permitting the transportation of non-reducible loads, also referred to as "wide-loads." If a transporter wishes to move a load of twelve feet or more in width over state highways, they are required to apply for a "daily trip" permit. For "super-loads" (over 130,000 pounds), MassDOT must conduct a full structural analysis of the planned roadway to ensure that the roads and bridges can handle the weight and size of the load.

In 2013, the FRCOG examined the most likely routes in the region to transport wind turbines and the range of impacts this transport could have on the region. The impacts include: the construction of temporary roads leading to the final sites, increased traffic (not just wide-loads) associated with the construction of the projects, and traffic flow disruption. When a wind generation facility is being planned in the region, these factors should be addressed.

Freight Rail Transport

While the vast majority of freight is shipped by truck in New England, MassDOT has projected that the amount of rail freight shipments will double over the next 20-30 years. This increase could have a significant impact on Franklin County as two major New England rail lines pass through the region.

Rail Lines

As highlighted earlier, Franklin County has 93 route miles of railroad, including two north-south routes and one east-west route. There is a map of the rail lines at the end of this chapter. The north-south routes are the Connecticut River Main Line (owned by the Commonwealth of Massachusetts) and NECR Main Line (owned by New England Central Railroad). The east-west line is the Patriot Corridor route for Pan Am Southern. This route runs along Route 2 and follows the Deerfield and Millers Rivers. A small east-west/north-south connector, the East Deerfield Route, is also owned by Pan Am Railways.

Patriot Corridor: (also known as the Freight Main Line) is the most important rail line in the Commonwealth of Massachusetts – serving up to 5 million tons annually of freight between eastern Massachusetts and eastern New York (near Albany) at Rotterdam Junction. It provides an important link for the paper and lumber industries in northern New England and Canada. There are two east-west rail lines in



Freight train passing through Franklin County.

Massachusetts (the other roughly follows the Massachusetts Turnpike), but this route has less severe grades because of the 4.75 mile long Hoosac Tunnel that runs through, rather than over, the Berkshire Mountains. While the Hoosac Tunnel is an important advantage for this line, it does limit the freight capacity that can be hauled due to tunnel height restrictions (19'6"). At Ayer this line branches off to Boston, Lowell (NH), and Maine.

This rail line is owned by Pan Am Southern (PAS), which is a joint venture between Norfolk Southern and Pan Am Railways (PAR) that was formed in 2008. A part of this joint venture includes the rehabilitation of 138 miles of track, replacement of ties, and the addition of over 35 miles of new rail between Ayer, MA and Mechanicville, NY. These improvements will allow for increased freight capacity to be transported with a higher 286,000 pound weight limit and first generation double-stack capability. The improvements will also increase track speeds. The joint venture will create another Class I freight railroad in Massachusetts for increased competition.

Connecticut River Main Line: This rail line is owned by the Commonwealth of Massachusetts. The Commonwealth (MassDOT) purchased the rail line in 2014 from Pan Am Railways (PAR). The Line has connections to the NECR rail line in Northfield. This line is now carrying Amtrak passenger service with a stop in Greenfield at the John W. Olver Transit Center. This service was made possible due to funding received from the 2010 American Recovery and Reinvestment Act (ARRA), which funded track improvements and passenger platform construction along the line. The track improvements also allow for greatly increased speeds along this line for freight traffic.

NECR Main Line: This rail line is owned by New England Central Railroad (NECR), which is a Class III railroad. The line is composed of 53 miles of right-of-way between Monson and Northfield. It has a major rail facility located in Palmer in Hampden County, where it interchanges with CSX. The line also interchanges with the Connecticut River Main Line in Northfield and Montague in Franklin County. These large numbers of connections makes this line competitive with the national rail system. This line is also a major north-south corridor for the New England region, connecting Canada with Connecticut and New York. Average annual freight rail tonnages is 1.3 million tons, much of it composed of lumber products and lime slurry shipped from Canada.

Rail Yards

There are limited public railroad loading areas suitable for transloading in Franklin County. A transloading facility refers to a terminal where freight is transferred from one mode to another. Transloading facilities enable companies that are not located along rail lines to combine lower cost rail hauling with truck delivery. Typical goods that move through transloading terminals include: lumber, sheetrock, plastic pellets, bulk paper rolls, pipes, and bulk liquids such as fuel oil.¹ Modern transloading facilities are accessible to major highways, have many tracks, covered warehousing, and room for storing and moving tractor-trailers. While Franklin County does not have a transloading facility, below is an inventory of the rail facilities in Franklin County and a general evaluation of the facility's potential for transloading freight.

- East Deerfield Rail Yard: The East Deerfield Rail Yard, located off River Road, is partially owned by the Commonwealth (MassDOT), but is subject to permanent easement for railroad uses by Pan Am Southern. The rail yard is located on the Patriot Corridor that travels east-west and is connected to the Connecticut River Main Line that travels north-south. The yard is approximately one and a half miles long and a half-mile wide. It has the capacity to sort and hold up to 900 rail cars

¹ Indus-Rail Co., Preliminary Report Freight Diversion Study, conducted for the Franklin Regional Council of Governments, 1999, p. 5.

per day. Approximately 600 to 900 cars pass through the yard on a daily basis. The rail yard is used primarily as a classification yard for trains coming from the Pan Am north-south and east-west main rail lines. There are several public unloading tracks, and other tracks with the potential for public unloading. Only one track appears to be used for unloading now, primarily for unloading sodium chloride. The East Deerfield Rail Yard is located between two rivers (the Connecticut and Deerfield) on the east and west, wetlands on the north, and a residential neighborhood on the south. The road access to the rail yard was improved in 2003 as a result of a project that increased bridge clearance at the River Road bridge. This helped immensely in providing direct road access from the facility to the Route 5/10 corridor and Greenfield. The Deerfield Master Plan (2000) suggested that the rail yard could be an appropriate location for a future transloading facility. The rail yard was used for some transloading of freight historically. A modern transloading facility would require additional storage space and equipment at the rail yard, but is feasible for the site. One result of a new transloading facility would be increased traffic in and out of the rail yard. Another concern of expanding the facility is the potential for contamination and adverse impacts on the natural resources in the vicinity, including the Deerfield River (located $\frac{1}{4}$ mile west from the rail yard) and the Connecticut River (located $\frac{1}{4}$ mile east and $\frac{1}{2}$ mile to the north of the yard).

- South Deerfield: There is a small rail facility in South Deerfield, off of Elm Street and Tine Drive. The facility has two public unloading tracks and a small amount of use. The access is poor to both tracks and there are no storage capabilities. The site was used for small-scale transloading historically, but would likely not be suitable for a larger-scale facility now.
- Millers Falls: The Millers Falls rail yard is located off of East Main Street, at the junction of two major railroad lines, the NECR and the PAR. The yard includes a disconnected facility with a dock and ample trailer storage on the PAR side. NECR has three public railroad tracks used for unloading sodium chloride with poor track access and limited trailer storage.

Rail Sidings

In 2013, the FRCOG conducted an inventory of rail sidings in Franklin County. Rail was once historically very important to the local economy. As a result, the county has a number of rail sidings that have been constructed along the currently active rail lines in the region. Prior to

this project, the FRCOG did not know how many sidings existed or where they were located. For the Inventory, the FRCOG compiled a table of all existing sidings by rail line and direction with accompanying map. The FRCOG also created a second table with a list of all properties that have the potential for either accessing adjacent rail sidings or developing new sidings. Both of these tables can be used for understanding the potential of freight movement by rail in the county and also to promote economic development in the region.

Challenges to Freight Movement on Rail

Idling Issues Next to Residential Uses

Train locomotive idling is a recent issue that Franklin County has encountered, particularly in the Millers Falls rail yard where residential land uses closely abut the rail yard. Train locomotive idling occurs when trains are stationary, either at railyards or on the tracks or track sidings, and do not turn off the locomotives. Locomotive idling is necessary to some extent for a variety of reasons including weather conditions, safety testing, and car checks in which power is needed. The state of Massachusetts has a 30 minute locomotive idling limit. While a locomotive idles, air and noise pollution occur, which can be harmful and disruptive to neighboring land uses. There are ways to minimize the idling and its effects, such as using cleaner diesel fuel or various locomotive technologies, such as Auxiliary Power Units (APUs) which are small diesel-powered generators that maintain many locomotive systems within required parameters when the engines are turned off. These technologies are not always applicable and locomotives must sometimes idle for longer periods of time.

Safety of At-Grade Crossings

The upgrades to the Connecticut River Main Line to accommodate the return of Amtrak have allowed speeds to increase from an average 10 miles per hour to a much faster 70-75 miles per hour. As a result of these dramatically increased speeds, MassDOT conducted evaluations of all of the at-grade road-rail crossings to ensure that they are properly equipped with warning devices that will provide adequate safety for crossing vehicles with the higher train speeds. The FRCOG also provided recommendations at specific crossings where there may be pedestrian and bicycle activity. Because there is such a large increase in speed, the performance of these warning devices should be continually monitored. Maintenance and repair of grade crossing warning device equipment are the responsibility of the railroad owner. The Federal Railroad Administration has established minimum inspection requirements for railroad maintenance of the warning systems, and each operating railroad is responsible for inspecting crossing system signals and equipment. There are a number of private road crossings in Franklin County that are not required to have any warning devices. The much higher speeds on this line may warrant attention to this gap. Current improvements to the Freight Main Line by Pan Am Southern should also include

an evaluation of safety measures at the at-grade crossings. The speeds on this line are not expected to increase as fast as the Connecticut River Main Line, but any changes should be assessed for safety.

Safety of Freight Movement

Transport of Hazardous Materials

In August 2010, the Franklin County Regional Emergency Planning Committee (REPC) completed the creation of a Regional Hazardous Materials Emergency Plan (HMEP) with support from the FRCOG. The development of the HMEP serves several purposes, including compliance with the statutory requirements that all regional Emergency Planning Committees develop, exercise, and annually review a Hazardous Materials Emergency Plan. Also, no regionally focused planning tool had previously existed to describe and analyze hazardous threats in Franklin County. Third, a regional plan was needed to standardize Hazardous Materials release reporting, notification, and response.

Among the HMEP's priorities is addressing the potential issues associated with the freight transport of hazardous materials and having an emergency plan for hazardous material spills. The HMEP assumes that virtually all railway and road corridors transport hazardous materials at some times and that, consequently, any rail line or roadway can be a potential hazardous material spill site.

The HMEP includes an analysis of the level of hazardous materials transported in the region on major roadways and on rail lines. This analysis is based on a one-time study of the level of general freight transport on rail facilities and major roadways, and the amount of freight traffic that contained hazardous materials. This study was conducted in 2003. The study estimated that approximately 13 to 15 trucks per hour traveling through the region contain hazardous materials. Most of these trucks are on Interstate 91. For rail transport, it was estimated that there are 100 to 130 train cars with hazardous materials passing through the region each day. The study also found that up to 500 rail cars were stopped at the East Deerfield Rail Yard at any given time, with 20 to 50 of them containing hazardous materials. See Table



Freight train passing through a roadway underpass.

6-1 for a summary of transport of hazardous materials by rail in the region.

Table 6-1: Estimated Level of Hazardous Material Transport on Area Rail Lines

Rail Line	Trains per Day (General Merchandise)	Average Number of Cars per Train	Average Number of Cars per Train with Hazardous Material
Patriot Corridor Line	5 - 12	50	4
Connecticut River Main Line	2 – 3	30	2
NECR Main Line	1	60	5
East Deerfield Rail Yard	10 – 15*	n/a	2 – 5

*Trains passing through the yard. Source: Franklin County Regional Emergency Planning Committee, “Franklin County Hazardous Material Emergency Plan and Maps,” 2010.

The only known significant transportation change since the 2010 HMEP report is the increase in ethanol transport by rail through the county. The Patriot Corridor has been identified by the Massachusetts Emergency Management Agency (MEMA) as a potential primary rail route to carry Ethanol-85, which requires different fire suppression equipment and methods for extinguishing than for gasoline-fueled fires.

Chemical Incident Exercises and Response

The Franklin County Regional Emergency Planning Committee (REPC) has conducted a number of training exercises in the last few years for dealing with chemical spills. In 2004, in the first such training exercise in more than a decade, FRCOG and the REPC conducted a full-scale training exercise at the Buckland Trolley Museum Railyard in Shelburne Falls. The exercise provided an opportunity to practice chemical spill response through a scenario of a chemical leak caused by a car crash with a rail tank car on an active rail line. The exercise was attended by responding departments from surrounding towns, the regional district (District 4) Hazardous Materials Team, and rail employees.

Since the completion of the HMEP in 2006, mock chemical spill exercises have been carried out for four Franklin County communities as part of implementing the plan. These exercises were designed to test the regional preparedness for dealing with chemical releases and the coordination of different agencies in addressing such situations and in dealing with evacuations.

From 2010 on, the REPC has annually conducted tabletop exercises, primarily focused on scenarios involving the spilling of ethanol. The Massachusetts Department of Environmental Protection found that ethanol production and transport had increased, and was expected to continue to increase, leading to the REPC prioritization of ethanol response.

The REPC participated in the development of a local Ethanol Response Plan, and tested that plan in 2014. In the past year, PanAm railways and the Federal Railroad Administration provided the REPC with a safety seminar to address the concerns related to increased rail traffic and speed as passenger rail re-entered the region.

These types of preparedness activities help create a regional response that is timely and well-coordinated. Franklin County has experienced hazardous material spills in the past. In 1999, a train derailed in Charlemont and dumped an estimated 6,000 gallons of liquid latex into the Deerfield River. In September 2006, a freight train headed to the East Deerfield Railyard derailed onto its side with 20 cars carrying feed grain and vegetable oil going off the tracks. Fortunately, none of the cars ruptured. The rapid response to this derailment demonstrated successful coordination between local, regional, and state officials.

Recommendations for Freight Transport

- Continue to assist with the current and planned improvement projects on Route 2 East and to monitor how they impact freight trucking.
- Continue to work with local communities and highway officials to address safety concerns related to trucks transporting wide loads through Franklin County.
- Continue to monitor and assess the transport of hazardous materials in the region and to develop, update, and coordinate plans with the Regional Emergency Planning Committee and appropriate agencies for responding to a hazardous materials spill.
- Conduct a study to assess which roadway crossings of rail lines are potentially hazardous, and to recommend changes to improve the safety of these locations.
- Rehabilitate the General Pierce Bridge with an increased weight limit of 49 tons to make truck shipping through the region more efficient and safe.
- Evaluate the options of improving the low-clearance overpasses in Greenfield on Bank Row and at the Montague City Road and Cheapside Street intersection.
- Explore the installation of overheight vehicle detection systems at low clearance overpasses and bridges, including the Iron Bridge in Buckland and Shelburne.

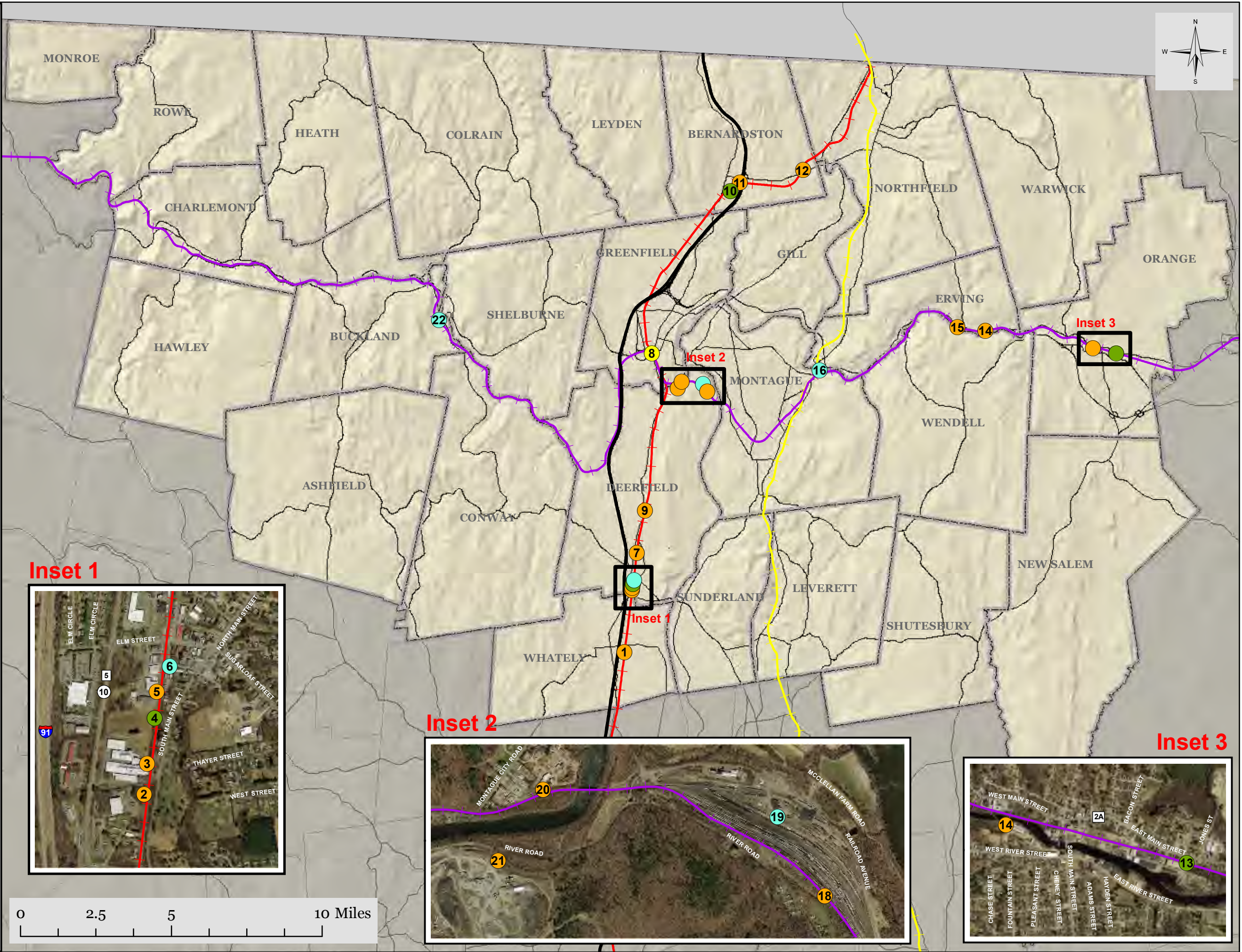
Franklin County Massachusetts

Rail Sidings Inventory

- **Railyard**
- **Passenger Rail Stop**
- **Rail Siding present**
- **Site for potential rail siding access or development**
- + **Connecticut River Main Line**
- + **East - West Freight Main Line/Patriot Corridor**
- + **NECR Main Line**
- **Major Road**

ID	Abutting Parcel Description
1	Yankee Candle Company
2	Harris Rebar
3	Atlantic Furniture
4	Yankee Candle Company (field)
5	Crop Production Services
6	South Deerfield Unloading Area
7	Channing Bete Company
8	JWO Transit Center
9	Welch (farmstand)
10	Priority Development Site Lot 1
11	Kringle Candle Company
12	CaroVail
13	Rodney Hunt-Fontaine, Inc.
14	Former Erving Paper/Cereal Factory site
15	Erving Industries
16	Former Usher Mill site
17	Millers Falls Railyard
18	Pan Am Southern
19	East Deerfield Rail Yard
20	wTe Recycling Inc
21	Trew Stone/All States Materials Group
22	Shelburne Falls Railyard

Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



7

Passenger Rail



2016 Regional Transportation Plan

7 Passenger Rail

Railroads have a long and proud history in Franklin County dating back to the 1840s. In 1920, there were four separate railroad companies offering freight and passenger service to several towns in Franklin County, and as many as seventy trains a day operated in all directions. Today, Amtrak, the national passenger rail corporation, operates one train daily that passes through Franklin County twice a day on its travel between Washington, D.C. and St. Albans, Vermont.

Existing Conditions

Knowledge Corridor/Connecticut River Main Line Passenger Rail

Historically, passenger rail service in Western Massachusetts traveled north-south along what is known as the Connecticut River Main Line or the Knowledge Corridor. This line roughly parallels Interstate 91 and the Connecticut River from New Haven, CT to St. Albans, VT and beyond. During the 1980s, due to a series of unresolved disputes regarding track maintenance, Amtrak relocated service away from the Connecticut River Main Line, traveling inland from Springfield, MA to Palmer, MA, where it turns north and rejoins the Connecticut River Main Line in East Northfield, MA. This detour added approximately 25 minutes to each one way trip and removed direct service to Franklin County. However, in 2014, Amtrak returned the Vermonter service to the Connecticut River Main Line with stops in Springfield, Holyoke, Northampton, and Greenfield once per day in each direction.

In January of 2010, the Commonwealth of Massachusetts was awarded \$70 million in federal stimulus funding to make improvements to the Connecticut River Main Line to extend and restore passenger service to the Knowledge Corridor. The improvements included: crosstie and rail replacement, rehabilitation of grade crossings, reactivation of passing sidings, upgrading of switches and signals, and improvements to bridges. The restored alignment cuts 25 minutes per trip and adds stops in Northampton, Holyoke, and Greenfield. These improvements allow freight trains to operate at a much faster speed of 40 miles per



Inaugural run of the first passenger train to return to Greenfield on December 29, 2014.

hour, rather than the previous 10 miles per hour. The passenger rail service can also now travel significantly faster as well – up to 80 miles per hour through the region. The newly rerouted Vermonter train began service on December 29, 2014. The train now arrives in Greenfield twice a day (once in each direction) at the John W. Olver Transit Center.

The Vermonter route is heavily subsidized by the Vermont Agency of Transportation, MassDOT, and the Connecticut Department of Transportation. It travels between Washington D.C. and St. Albans, VT via Philadelphia, New York, and Springfield. This route used to connect to Montreal, Canada, first by train, and later by bus. However, in 2004, the connecting bus service to Montreal was discontinued. As a result, the Vermonter service no longer provides a connection to Montreal. However, regional leaders are making progress in reconnecting Montreal with passenger rail service. The main factor in preventing access to Montreal has been border crossing issues, but it is anticipated that these issues will be resolved in the next year.

Current Activities and Future Planning

New England Vision for High Speed and Intercity Passenger Rail

In 2009, the six states in New England came together to create a Vision for a future regional rail system that will enhance New England in many ways, including: providing a foundation for economic competitiveness; promoting livable communities; and improving energy efficiency and environmental quality. The Vision is based around a high speed rail network that will link major cities in New England with smaller cities and rural areas and internationally to Montreal. This high speed rail network is composed of a few key corridors as shown in the map on the following page. Significant investment and infrastructure improvements to the existing rail lines along these corridors have been made or are under active exploration. The following section will detail the Northern New England Intercity Rail Initiative (NNEIRI), which is the formal study to evaluate service options along the identified key corridors.

Northern New England Intercity Rail Initiative

Massachusetts, Vermont, and Connecticut are partners in the Northern New England Intercity Rail Initiative (NNEIRI), which is a study to examine the opportunities and impacts of more frequent and higher speed passenger rail service in the three states. Specifically, the Massachusetts Department of Transportation (MassDOT) and Vermont Agency of Transportation (VTRANS), in collaboration with the Connecticut Department of Transportation (ConnDOT) and the Federal Rail Administration (FRA), are examining two major rail corridors known as the Inland Route and the Boston-to-Montreal Route. The Inland Route corridor links Boston and Western Massachusetts via Worcester and Springfield, MA and then travels southerly from Springfield to New Haven, CT connecting to the larger Amtrak Northeast



Northern New England Intercity Rail Initiative Study Map. Source: MassDOT

Corridor. The Boston to Montreal corridor is the same as the Inland Route between Boston and Springfield. From Springfield, the rail corridor then runs northerly following the Connecticut River Main Line into Vermont and ending at the Montreal Central Station in Quebec. The goal of the NNEIRI Study, which includes the entire 470 mile corridor between Boston, Springfield, New Haven, and Montreal, is to:

- Evaluate ridership potential;
- Identify environmental effects; and
- Create service development plans for both corridors.

Current Project Status

The NNEIRI has evaluated three “Initial Build Alternatives” and a “No Build Alternative” for potential passenger service along the Inland and Boston-to-Montreal Routes. They included variations of speeds, equipment, and track engineering. After evaluating these alternatives, the study proposed in 2015 a “Draft Build Alternative Service,” which recommends:

- Top speeds of 75 mph;
- No express service between major cities (local service only);
- 8 round trips between Boston and New Haven (via Springfield);
- 1 round trip between Boston and Montreal (via Springfield);
- Double-tracking between Worcester to Springfield; and
- Additional Vermont sidings.

The next steps for the NNEIRI is for the project partners to conduct a Tier 1 Environmental Assessment, hold stakeholder engagement and public meetings regarding the proposed Draft Build Alternative, and develop Service Development Plans for each corridor.

New Haven-Springfield Commuter Rail Implementation

Part of the Vision for the New England High-Speed and Intercity Rail Network is the New Haven-Springfield commuter rail line. Formal planning for improvements to this corridor has been in progress since 2005. The New Haven to Springfield commuter route is composed of 62 miles of existing rail infrastructure that are currently owned and operated by Amtrak. This rail line, which is often referred to as the “Springfield Line,” travels from Union Station in New Haven, CT through numerous towns and cities to Union Station in Springfield, MA. The new rail service is envisioned to provide future commuter rail access to the towns and cities along the rail corridor; multiple links to Amtrak’s Intercity service; direct links to the existing Metro North Railroad and Shore Line East Commuter Rail services in New Haven; and a connection to the proposed New Britain-Hartford Busway.

Project History

In June 2005, the Connecticut Department of Transportation (ConnDOT) completed an implementation study for commuter rail service between New Haven, Connecticut and Springfield, Massachusetts. The Commuter Rail Implementation Study evaluated the ridership, impacts, and costs of providing commuter rail service from New Haven to Hartford to Springfield, and explored various service options.

Current Project Status

In August 2010, ConnDOT completed a *Service Development Plan for the CT New Haven-Hartford-Springfield (NHHS) Corridor*. Much of the Commuter Rail Implementation Study's recommendations were incorporated into this Plan. They include the following key elements:

- Increase one-way intercity trains from 12 to 25 per day;
- Add 21 one-way commuter trains per day;
- Reinstall 24.5 miles of double track on existing single track locations;
- Increase the number of rail stations served by rail from 8 to 13;
- Have all stations incorporate high-level platforms and grade-separated pedestrian facilities;
- Improve the existing station in Windsor Locks to accommodate bus transfers from the station to Bradley Airport; and
- Revise local bus routes to provide bus service to the rail stations.

The total cost of the project is estimated to be \$480 million. The State of Connecticut has agreed to provide \$280 million in funding and the federal government has provided an additional \$161 million in funding through federal stimulus funding from the American Recovery and Reinvestment Act (ARRA) for the needed track upgrades. Together, these funding sources make up almost 80 percent of the needed funding for improvements to this rail line. Final design of the improvements was completed in 2014 and construction is now underway. Operation of the new high-speed rail system should begin in late 2016.

Springfield-Greenfield Regional Commuter Rail

Feeding into the New Haven to Springfield Commuter Rail Service mentioned above is plans for a regional commuter rail service between Springfield and Greenfield. The FRCOG has been working with the Pioneer Valley Planning Commission, local mayors, and MassDOT to bring commuter rail service to Western Massachusetts along the Knowledge Corridor. In 2013, the Massachusetts Legislature set aside \$30 million in a transportation bond bill to purchase and rehabilitate decommissioned MBTA locomotives and coach cars to use for commuter service on the Knowledge Corridor. Preliminary plans are for a service that would run six to eight times

a day between Springfield and Greenfield (potentially up to Brattleboro, VT) and feed into the New Haven-Springfield commuter service that will begin running in 2016 with an initial 12 round trips per day between those two cities. Current rough estimates for operating costs are between \$1.8 and 2 million. The next steps include securing funding for the operating costs and determining an entity to operate the service. The goal of regional leaders is to have the commuter service up and running in the next two to four years.

East-West Passenger Rail

There was once also passenger service running east-west through Franklin County with a stop in Greenfield. During the 1950s, this east-west rail line handled eight trains a day as they stopped in the county on their way between Williamstown in the west and Boston in the east. This passenger service was discontinued in the 1960s due to declining passenger demand and deteriorating track infrastructure. Currently, the closest east-west passenger rail service to Franklin County can be picked up in Palmer, West Springfield, or Fitchburg in order to travel east to Boston. There have been efforts over the last few years to expand passenger service further westward towards Greenfield.

Unfortunately, this east-west route is not part of the recent New England Vision for High Speed and Intercity Passenger Rail and has therefore not received comparable attention or funding as the north-south routes in the region. However, there is definitely a demand for east-west passenger service in Franklin County. The surveys and public outreach that were conducted as part of the update to this RTP revealed that many residents in Franklin County would like to travel to Boston via rail for employment, medical, educational, and recreational purposes. The east-west rail line is owned and maintained by PanAm Southern, which is currently working on upgrading this line, also known as the Patriot Corridor, for freight travel. This work, combined with political support from the New England Rail Vision, and funding could lead to a favorable situation in which it is possible that east-west passenger rail is restored to Franklin County. The following section describes the activities related to extending east/west rail.

Fitchburg/Gardner Activities

There are currently 13 trips inbound and outbound each weekday on the Fitchburg Commuter Rail line between the Fitchburg Intermodal Center and North Station in Boston. The Commuter Rail line is operated by the Massachusetts Bay Transportation Authority (MBTA).

Some Franklin County residents commute to the Boston metropolitan area via the Fitchburg line. One option for traveling to Fitchburg is the current G-Link bus route operated by the FRTA and the Montachusett Area Transit Authority (MART) which provides weekday bus service between Greenfield and Orange (through FRTA), with connecting service from Orange to

Gardner and the Fitchburg Intermodal Center (through MART). The FRTA portion of the G-Link is called the Route 32 bus route. However, for commuters traveling from Greenfield, the trip to Fitchburg is a long one, involving transfers between three different bus routes, and having a total estimated travel time of at least two hours given current bus schedules. After arriving in Fitchburg, commuters still need to take the train and then commute from their train stop to their final destination.

The MBTA conducted the *Fitchburg Commuter Rail Service Expansion Study* (February 2005). The study examined current conditions along the Fitchburg Commuter Rail Line and made recommendations for potential service improvements. Short-term, mid-range and long-range recommendations were proposed. A number of the proposed improvements will have positive impacts for the residents of Franklin County who currently ride, or who would like to ride, this commuter rail service to the Boston metropolitan area.

The short-range recommendations of the Fitchburg Rail Service Expansion Study included a number of station improvement projects and other changes aimed at reducing travel times, and increasing passenger comfort, service reliability, and the overall quality of the service to better meet ridership demands.

The recommended mid-range improvements continued these goals. Among the recommendations is the implementation of a new van/bus shuttle service from Gardner to the Fitchburg Station. One idea is to locate a Park and Ride lot between Fitchburg and Gardner and run shuttle service for the station to and from there.

The long-range recommendations of the study include extending commuter rail service along the Fitchburg Rail line beyond the current terminus in West Fitchburg to Gardner. In 2009, \$55.5 million in federal stimulus ARRA funding was provided for the Wachusett Commuter Rail Extension Project. This project has extended the Fitchburg Commuter rail line by 4.5 miles to a new rail station on the western border of the Town of Fitchburg near Route 2. The project also includes track improvements in Westminster to support freight and passenger rail and a new layover facility for light maintenance. It is expected that the Wachusett Station, which is soon to open, will serve an estimated 400 new commuter rail passengers beginning in Fall 2016. The location of the station near Route 2 will simplify access for commuters as they drive to the train.

Commuter rail service from Gardner to Boston previously operated on the Fitchburg Line in the early 1980s. In the 1980s, the service began with 6 round-trips to Boston each weekday. The service was reduced in 1983, and then discontinued entirely in 1984 due to inadequate

funding. The Fitchburg Commuter Rail Service Expansion Study lists a number of constraints to the expansion of the commuter rail line from Fitchburg 16 miles west to Gardner. The major factor cited is the ownership and availability of the rail line. The rail infrastructure from Boston to Fitchburg is owned by the MBTA. From Fitchburg west, Pan Am Southern owns the infrastructure, and the MBTA would need to negotiate trackage rights with Pan Am Southern to operate commuter rail service on this section. Another major factor is the need to upgrade the tracks. At the present time, half of the Fitchburg-Gardner section is single track, and would need to be at least double track to support commuter service and the continuing freight transport. In addition, there are grade issues with the track just past Westminster into Gardner that adds additional travel miles and limits speeds that make extending service into Gardner very costly for the MBTA. The study estimates the capital costs of upgrading this portion of the line and commencing the commuter service at \$50 million.

The main conclusion of the Fitchburg Commuter Rail Service Expansion Study focused on the study's short-term recommendations and the need to reduce the travel times between Fitchburg and Boston. These recommendations were addressed in the Fitchburg Line Improvement Implementation Plan completed in December 2005. The Fitchburg Line Improvement Plan identified its primary goal as reducing the trip time between Fitchburg and Porter Square in Cambridge to one hour, from the current scheduled trip time of 80 minutes during the morning peak. The Improvement Plan listed many specific steps that could be implemented to help achieve that goal.

The implementation of the mid-range and long-range recommendations is slower, yet still in progress. The new Wachusett Station is a small step in this implementation. The expansion of commuter rail service from Fitchburg to Gardner, and even in the shorter term, the creation of a Park and Ride lot and shuttle service for the Fitchburg Intermodal Center, hold promise for Franklin County commuters seeking transportation options for traveling to the Boston metro area.

The FRCOG, as the staff of the Franklin County Transportation Planning Organization, continues to include a task in its annual Unified Planning Work Program (UPWP) to provide support and to advocate for increased passenger rail service in Franklin County, and to participate in, and monitor the various studies and implementation projects that are planned or underway, as discussed in this chapter. In this task, the FRCOG works with other Metropolitan Planning Organizations and state agencies in Massachusetts, Connecticut, Vermont, and New Hampshire to initiate and support efforts to increase passenger rail service in Franklin County and New England.

Recommendations for Passenger Rail

- Continue to participate in and support the introduction of commuter rail service along the Knowledge Corridor line.
- Continue to monitor progress on the implementation of New Haven-Springfield Corridor improvements, and its implications for Franklin County, and the potential for passenger rail commuter service north of Springfield, Massachusetts.
- Continue to participate in the Northern New England Intercity Rail Initiative and support improvements which will benefit Franklin County residents and businesses as feasible.
- Continue to monitor the implementation of the recommendations of the Fitchburg Commuter Rail Service Expansion Study, particularly the recommendations which could most affect Franklin County commuters who currently, or who would like to, use commuter rail to commute to jobs in the Boston metro area.
- Work with the Montachusett Regional Planning Commission to evaluate the feasibility and costs of extending passenger service west from Fitchburg to Franklin County.
- Continue to work with the other New England States to support and assist in creating the New England high speed and intercity rail vision.

Franklin County Massachusetts

Active Rail Lines

Ownership:

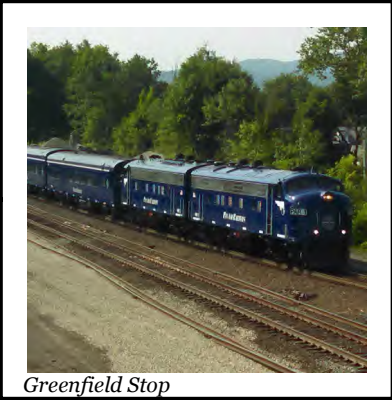
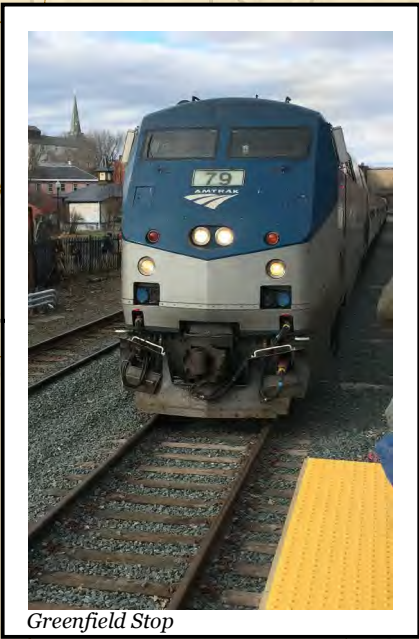
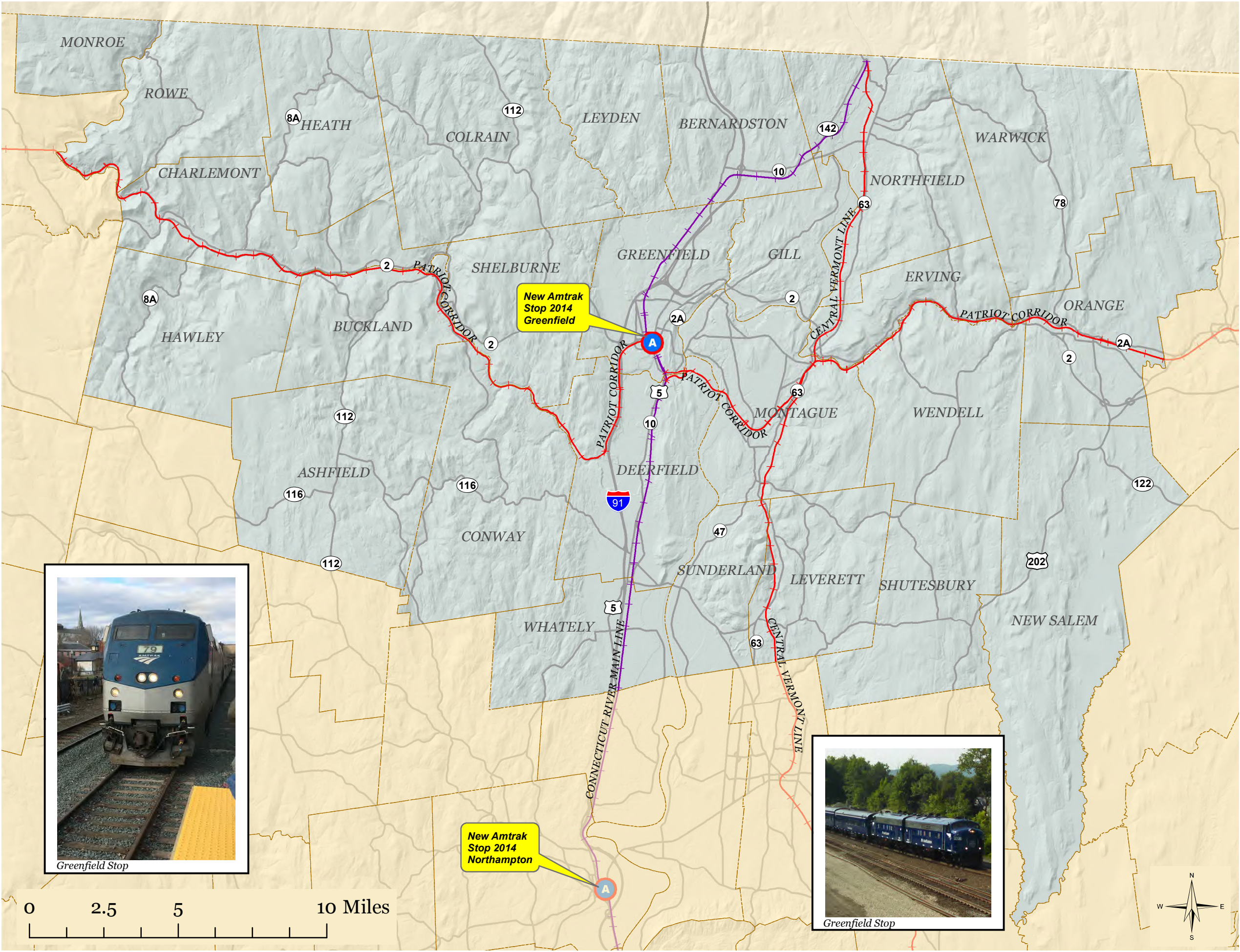
Patriot Corridor - PanAm Southern
Connecticut River
Main Line - Commonwealth of Ma.
Central Vermont Line -
New England Central Railroad

- Freight
- Freight & Passenger*

*Passenger rail operated by Amtrak (the Vermonter)



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



8

Airports



2016 Regional Transportation Plan

8 Airports

There are two public-use airports located in Franklin County. They are the Orange Municipal Airport in Orange and Turners Falls Airport in Montague. A map showing the locations of these airports is located at the end of this chapter. These public-use airports benefit the region in several ways. Primarily, local airports are part of a national air transportation system, which provides intermodal connections and alternatives for fast, efficient transportation of people and goods. The economic benefits of local airports include supporting existing businesses and attracting new businesses by providing convenient access to and from the area. Local airports also provide public safety services, such as emergency medical air transportation. In addition, the popularity of aviation-related recreational activities, such as parachuting, generates tourism activity that brings many visitors to the area.

According to the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems, both the Turners Falls and Orange Municipal Airports are classified as “general aviation” airports. General aviation airports provide facilities for privately owned personal and corporate aircraft, and are also used for a variety of other aviation activities, such as flight instruction, charter services, aerial agricultural spraying, aerial photography, parachuting and similar activities. Both airports are expected to remain general aviation airports in the future, and are not expected to expand into commercial airports with scheduled passenger or freight service. At the same time, neither airport is at capacity, and both airports could accommodate increased business and flight activity.

Both airports are viewed as important economic resources for their towns and for the region overall. Both airports are located adjacent to industrial parks to facilitate and promote their use by local businesses. In Turners Falls, there is the 225-acre Airport Industrial Park. In Orange, there are two industrial parks, the 57-acre Orange Industrial Park to the east of the airport and the 59-acre Randall Pond Industrial Park to the west of the airport. While both the Airport Industrial Park and Orange Industrial Park are nearly built out, the Randall Pond Industrial Park has some vacant land that can accommodate new development. In addition, areas near the Orange Airport have been identified by the Town as potential sites for future industrial and/or commercial development.

The Orange Municipal Airport and the Turners Falls Airport are each directed by an Airport Commission with the day-to-day management by an Airport Manager. Airport Commission members are appointed by the Select Board. Both airports have engaged in long-term

planning regarding improvements and expansions to their facilities and use, including activities to attract additional business.

An Airport Master Plan is a comprehensive study of a particular airport as it plans for its future growth and development. The community planning processes to create an Airport Master Plan involve coordination among the consultants preparing the plans, the Airport Commissions, municipal boards and officials, the general public, regional planning and economic development organizations, and State and Federal agencies.

Under the direction of the Airport Managers and Airport Commissions, the airports have each used a community planning process to create Airport Master Plans in the late 1990s and early 2000s. As part of the master planning process, an Airport Layout Plan (ALP) was prepared for each airport. An ALP is a detailed drawing of current and planned airport facilities. The planning process also included the creation of a Capital Improvement Plan (CIP), which is a schedule of prioritized improvement projects with their estimated costs. An airport's Capital Improvement Plan is updated annually to reflect completed projects and to prioritize future projects. As both airports are scheduled to update their Airport Master Plans in the next few years, the FRCOG anticipates actively participating in these processes as it has in the past.

Improvements that are specifically aviation-related may be eligible for funding by the FAA's Airport Improvement Program (AIP). The purpose of the AIP is to provide assistance to public-use airports across the country to maintain a safe, secure, and efficient national civil aviation system. The costs for AIP eligible projects are divided between the FAA, the Massachusetts Department of Transportation (MassDOT), and local communities. The federal cost share of these projects is 90 percent, with MassDOT and the local airport sponsor each providing 5 percent. Relevant projects eligible for the FAA's AIP funding include facilities or equipment associated with the construction or reconstruction of an airport. AIP funding is not available for routine maintenance projects. The Airport Safety and Maintenance Program (ASMP) of MassDOT provides funds for projects, such as routine maintenance, that are not eligible for AIP funding. Matching funds from the local sponsor (usually the municipality) are also required for ASMP projects. All airport improvement projects, whether AIP eligible or ASMP eligible, must be listed on a statewide Capital Improvement Plan which includes the airport specific CIPs filed with MassDOT.

The economic benefit of the airports include the direct benefits of the activities on-site at the airport (such as airport workers' salaries), indirect benefits from off-site activities attributable to the airport (such as airport worker, pilot, and passenger spending), and a

multiplier effect known as induced economic impact that results from the economic growth and activities induced by the airports' presence. A recent statewide economic impact study¹ of public use airports found that they contributed over \$16.6 billion to the Massachusetts economy in 2014, including \$6.1 billion in payroll for over 162,000 jobs. This study also estimated the annual economic impact for each public use airport. For the Turners Falls Airport, it was estimated that it resulted in 14 jobs and \$498,000 in payroll and contributed \$1,801,000 in annual economic output. The Orange Municipal Airport was estimated to result in 147 jobs and \$4,849,000 in payroll and contributed \$13,992,000 in annual economic output.

The planned improvements at the Turners Falls and Orange Municipal Airports will increase these facilities' current utility and safety, and will address the projected future aviation needs in the region. These improvements will also promote economic development by enhancing the quality of aviation facilities in the region for use by existing businesses and prospective businesses that may be seeking to locate in Franklin County. For example, some of the business growth at the industrial parks near the airports could be induced by the airports' facilities and services. The airport expansions and related business growth are not currently anticipated to generate significant levels of increased traffic on nearby roadways. However, the FRCOG will continue to monitor the impact of the airport projects on area traffic and area roadways, and to recommend improvements, if necessary, at a future date.

Orange Municipal Airport

Existing Conditions

The Orange Municipal Airport (airport code ORE) is the largest airport in the northwestern area of the Commonwealth. Located in the Town of Orange on the eastern edge of Franklin County, the airport is surrounded by two industrial parks, one on each side, and by forest land. The airport property abuts Route 2 and its entrance is approximately two miles from this highway. As mentioned previously, the Orange Municipal Airport is classified as a general aviation airport, which provides facilities for personal and corporate aircraft, and offers a variety of aviation and aviation-related activities.

The airport was built in 1929 as the Orange-Athol Airport. During World War II, the airport was significantly upgraded for potential military use. The airport's triangular runway configuration is a remnant of this update. Currently, the airport has two active runways. The third discontinued runway is now a taxiway.

¹ Massachusetts Statewide Airport Economic Impact Study Update, Executive Summary. MassDOT Aeronautics Division. 2015.

The airport's primary runway is runway 01-19, which measures 5,000 feet long and 75 feet wide. The airport's secondary runway 14-32 measures 4,801 feet long and 75 feet wide. Both runways have an asphalt surface. Recent improvements to the condition of the pavement on the runways were completed at the Orange Municipal Airport due to a \$500,000 federal American Recovery and Reinvestment Act (ARRA) award.

The runways' lengths enable the Airport to accommodate a wider variety of aircraft than smaller airports in the greater region, such as in Turners Falls, Gardner, and Fitchburg. In addition, the Airport has both Jet and 100LL aviation fueling capability on-site, which can be an important feature for pilots choosing where to land.



**Aerial view of the Orange Municipal Airport
(Source: MassGIS)**

Current Airport tenants include two aviation maintenance facilities, flight instruction business, two flying clubs, and a prominent skydiving business, as well as non-aviation entities such as a solar power company, graphic design company, an antique gas and steam engine club, a municipal dog park, and youth recreation programs.

A good demonstration of how one aspect of the airport's use can be an economic driver for the region is the popularity of Jumptown, a parachuting club based at the Orange Municipal Airport and the site of the nation's first commercial skydiving center. In recent years, 2,000 to 3,000 people annually parachute with Jumptown. It is estimated that approximately 3% of these people are from the North Quabbin region, while the rest travel from the Berkshires, the Boston metropolitan area, New Hampshire, Vermont, Connecticut and New York, according to the Jumptown Manager. As a result, Jumptown is a major attraction for visitors coming to the North Quabbin area. Not only do these visitors pay for Jumptown's services, they may also spend money to stay, eat, and shop at local businesses.

According to the Airport Manager, nearly all the major employers in the region use the airport on a regular basis. These employers range from locally based businesses to national

corporations. In addition, the airport is also used by state and federal military and public safety agencies as well as by groups providing medical services.

The runways at the Orange Municipal Airport can accommodate virtually all types of general aviation including jet traffic operations. An “operation” is defined as a landing, takeoff, or touch-and-go procedure by an aircraft at an airport. The estimated number of annual operations at the Orange Municipal Airport for 2014 was 39,620. This is a sharp increase from 25,000 in 2009, and above the pre-recession figure of 36,000 operations in 2006. According to the Airport Manager, airports are a good barometer of the economy, the recent decrease in operations is directly related to the national financial crisis of 2008. Airports across the state reported a decrease in operations of up to 50 percent. As can be seen in the recent figures, the number of operations have steadily increased and surpassed pre-recession levels.

According to the FAA, there are different types of operations. Generally, a local operation is performed by aircraft that remain in the local traffic pattern or practice within a 20 mile radius of the airport. An itinerant operation is performed by an aircraft arriving from outside the area or leaving the airport area. Other operations include air taxi, which carries passengers or cargo for hire, as well as military and medical related operations. Table 8-1 shows the number of and type of operations conducted at the Airport in 2014.

Table 8-1: Orange Municipal Airport Operations by Type

Type of Operation	Number of Operations
Itinerant	17,000
Taxi	13,000
Local	9,000
Military	600
Medical	20

Source: Orange Municipal Airport, Annual Report, December 31, 2014.

As of 2014, the mix of aircraft using the Airport consists predominantly of single-engine airplanes (65% of the annual operations), with some small multi-engine corporate airplanes (20%), typically used for skydiving and charter activities, and large corporate aircraft (15%) such as small jets including Gates Lear Jets and Cessna Citations. Multi-engine and larger corporate aircraft use of the airport has increased over the past ten years. The number of aircraft based at the airport as of 2014 is 74, which is 23 percent more than were based in pre-recession 2006. Of the aircraft based at Orange Airport in 2014, 84 percent are single-engine, 4 percent are multi-engine, and 9 percent are ultralight aircraft.

The Airport continues to expand its capacity for aircraft on the ground. The Airport currently has 30 hangars, which is four more than in 2006, with more hangars planned. However,

increased costs to access utilities on the west side of the airport has hindered development and deterred potential business development.

Current and Future Activities

The Orange Municipal Airport has continued to enhance its facilities over the years by installing new security fencing and gates, and enhancing the pavement condition of the runways.

Future priorities include the reconstruction of Taxiway D, constructing obstruction lights, and reconstructing Runway 01-19. In addition, an Airport Master Plan Update is scheduled for federal fiscal year 2017. The original Master Plan was completed in October 2000. In the following table is the Airport's Capital Improvement Plan, which identifies the priority projects to be undertaken in the next five years (see Table 8-2).

Table 8-2: Orange Municipal Airport Capital Improvement Program

Project (with expected federal fiscal year of the start of construction)	Projected Total Cost	Federal Funding (90% of cost)	State Funding (5% of cost)	Local Funding (5% of cost)
Reconstruct Taxiway D (FFY2016)	\$1,858,000	\$1,672,200	\$92,900	\$92,900
Airport Master Plan Update (FFY2017)	\$325,000	\$292,500	\$16,250	\$16,250
Part 77 Aeronautical study for Runways 1, 19 & 32 (FFY2017)	\$255,500	\$229,500	\$12,750	\$12,750
Construct Obstruction Lights – Phase I (FFY2018)	\$870,000	\$783,000	\$43,500	\$43,500
Construct Obstruction Lights – Phase II (FFY2019)	\$1,000,000	\$900,000	\$50,000	\$50,000
Reconstruct Runway 01-19, Route 2 Tree Clearing, Gravel Access Road (FFY2020)	\$4,710,000	\$4,239,000	\$235,500	\$235,500

Note: FFY = Federal Fiscal Year (October 1st through September 30th)

Source: Orange Municipal Airport, October 2014.

Projects that are currently not in the Orange Municipal Airport's Capital Improvement Plan, but have been identified for future implementation, are the establishment of a large corporate aircraft hangar, a smaller aircraft T-hangar (with approximately eight bays), and a new Terminal Building. The construction of the Terminal Building is scheduled for 2017. This construction is part of MassDOT's five-year plan announced in May 2014 to build and renovate administration facilities at 15 general aviation airports across the Commonwealth.

For Orange, the approximately \$3 million in state funds have been obligated to construct the Terminal Building.

The Orange Municipal Airport property contains a diverse and unique mixture of grassland, farmland, and forest areas, which provide important habitats for a wide diversity of plant and animal species including a number of rare grassland birds. The Airport is well known as an important birding site in the region. The Town of Orange recognizes the wildlife value of the airport property, and has worked with the Massachusetts Natural Heritage & Endangered Species Program, to ensure that the improvement and expansion projects do not negatively impact important habitats located on the site.

The Orange Municipal Airport property also contains a portion of an aquifer Zone II recharge area. The aquifer recharge area is strictly regulated in terms of drainage, stormwater discharge, and allowed developed land uses. Airport and town officials cooperatively recognize the sensitive environmental nature of this area, and as a result, the plans for future airport expansions and construction projects leave this area undisturbed.

Since 2004, the Airport has been financially self-sufficient, and does not rely on municipal subsidies for its operation. This self-sufficiency was achieved years earlier than initially projected and reflects the skilled management and numerous projects completed to update and expand the airport's infrastructure. This has resulted in growth in use and demand for the airport's facilities and services.

With Orange located along the Route 2 corridor and within an easy drive of the Boston metro area, the Orange Municipal Airport has been able to attract a number of tenants and other airport users from eastern Massachusetts. The Orange Municipal Airport competes for potential users from eastern Massachusetts with the general aviation airports located east along Route 2 in Gardner and Fitchburg. However, the Orange Municipal Airport is the only public-use airport along the Route 2 corridor to have a 5,000-foot runway, a feature which continues to attract users and which allows it to serve a more diverse mixture of aircraft than other airports nearby.

Turners Falls Airport

Existing Conditions

The Turners Falls Airport (airport code OB5) is a general aviation airport located in the Town of Montague. The property is bordered by an industrial park, the regional vocational high school, and forest land. Interstate 91 and Route 2 are both within a close distance to the airport.

The Turners Falls Airport has one runway (Runway 16-34) and a parallel taxiway. The paved runway is 3,200 feet long and 75 feet in width, and can accommodate small single engine and multi-engine piston aircraft, and small jets such as the Cessna Citation. The runway approaches are visual. The Turners Falls Airport has a fixed base operator on-site that provides various services including maintenance, flight instruction and fuel.



**Aerial view of the Turners Falls Airport
(Source: MassGIS)**

Most of the current users of the Turners Falls Airport are recreational flyers. Students and families of students from the multiple independent boarding schools in the region use the airport to travel between school and home. There are also some business-oriented travelers. A local manufacturer has used the airport for transporting personnel back and forth between the local plant and the corporate headquarters in a nearby state. Pioneer Aviation is located adjacent to the Airport property and runs a flight school and offers services for pilots.

The Turners Falls Airport completed an Airport Master Plan in 1990. The Plan was updated in 1999. The update examined the current and projected levels of use of the airport, and concluded with recommendations to extend the existing runway and upgrade various facilities. As a follow-up to this update, a Runway & Terminal Area Study and Airport Layout Plan (ALP) Update were created by Gale Associates, Inc. for the Montague Airport Commission in 2002. The ALP proposed various improvements, some have or will be soon completed and others are not to be pursued at this time. A complete update to the Master Plan is scheduled to be undertaken in FFY2016.

The FAA defines an operation as a landing, takeoff or touch-and-go procedure by an aircraft at an airport. According to the FAA's Airport Master Record, the annual operations at the Turners Falls Municipal Airport in 2014 was approximately 17,600. However, the Airport Manager believes that this estimate may be high.

As of 2014, the mix of aircraft using the Turners Falls Airport continues to be predominantly single-engine aircraft (96%) with some multi-engine aircraft (4%). However, with planned improvements to increase the runway length and install navigational aids, the aircraft mix is expected to show a moderate shift to decrease the percentage of single-engine aircraft and increase the percentage of multi-engine, turbo and potentially jet aircraft. At the same time, however, it is unlikely that the airport will attract and maintain bulk airfreight services in the foreseeable future due to its proximity to larger airports such as Barnes Municipal Airport in Westfield, Westover Metropolitan Airport in Chicopee, and the Orange Municipal Airport in Orange.

Airport operations are currently split 71 percent local and 28 percent itinerant, with the remaining operations being taxi or for other purposes. This ratio of local and itinerant is expected to continue. The predicted mix of local and itinerant operations is an important factor in determining how much short-term parking and long-term storage of based aircraft will be needed at the airport in the future.

As of 2014, there were 33 aircraft based at the airport, which is a slight increase from recent years but still less than the number reported in 1999 (48 based aircraft). One issue in increasing the number of aircraft based at the airport has been the limited amount of hangar space. The airport currently has 8 hangars which can accommodate up to 22 aircraft.

Current and Future Activities

The capital improvement activities at the Turners Falls Airport continue to focus on implementing the recommendations of the 1999 Airport Master Plan Update and 2002 Runway & Terminal Area Study and Airport Layout Plan (ALP) Update. These recommendations addressed facility improvements, including extending the length of the runway and improving associated facilities.

The ALP was created through a community planning process guided by a Technical Advisory Committee consisting of residents, local officials, regional officials, and State agencies appointed by the Montague Airport Commission. The FRCOG participated in this planning process. The ALP update was approved by both the FAA and MassDOT, and allowed relevant projects to be eligible for FAA funding through its Airport Improvement Project (AIP). Completed improvements at the airport based on the recommendations of these plans include the construction of a new security fence along Millers Falls Road and the first phase of the runway extension which added 200 feet on the west end to total a length of 3,200 feet. Part of this first phase included installing navigational lighting and a rotating beacon.

A future, second phase extension is proposed to extend the runway by an additional 1,000 feet. This second phase is contingent on funding and designing the expansion so it avoids environmentally sensitive areas, an area of sacred Native American sites, and other areas that need to be protected.

The consultants who created the 1999 Master Plan recommended expanding the runway length and width to accommodate all aircraft in the category of B-II general aviation aircraft (30,000 pounds in weight or less) with less than ten passenger seats. Presently, the Airport can only accommodate B-I general aviation aircraft (weighing 12,500 pounds or less). There are multiple environmental conditions and aircraft characteristics that determine appropriate runway length requirements for any given aircraft. The proposed second phase of the runway extension would need to address these factors.

During the permitting process for the first phase of the airport's runway reconstruction and expansion project, areas of environmental sensitivity and archeological concern on the airport property were identified. Meetings were held with representatives of the Narragansett tribe and friends of Wissatinnewag regarding Native American relics on site. It was determined in 2008 that the Native American sites were eligible to be included on the National Register. Discussions were also conducted with State environmental officials on how to protect the grasshopper sparrow and frosted elfin butterfly habitats that were found. Any proposed reconstruction and expansion of the runway will need to take these environmental and archeological factors into consideration so that the project avoids impacting these areas.

Additional recommended improvements in the ALP included work on the runway's associated taxi lanes and taxiways, upgrades to the runway approach, improvements to the apron, as well as perimeter fencing and other security recommendations. Many of the improvements recommended in the ALP have been implemented while some are in process or have been found not to be needed.

Recommendations completed in recent years include the acquisition of private property in the Runway 34 approach, improvements to the apron, and an extension of the runway by 200 feet. By the end of 2015, work will be completed to shift and extend the taxiway, so that it ties in to the runway closer to the ends and will be in compliance with its distance from the centerline.

Future planned projects are outlined in the airport's Capital Improvement Plan (see Table 8-3). These projects include the proposed extension of the runway by 1,000 feet, and the necessary archeological and tribal investigation, design and permitting with the project. Other major projects include Terminal Building improvements and perimeter fencing. As the state announced in 2014, a program to improve administration facilities at general aviation airports across the Commonwealth, an expanded Terminal building at the Turners Falls Airport has been proposed. Funding still needs to be secured and a timeframe confirmed for this project. The Airport Manager is also exploring options to use underutilized areas of the property for revenue generation, so as to help the airport become more self sufficient. Project such as these or other additional projects may be identified as a Master Plan update is scheduled to be undertaken in FFY2016, which will look at the improvements that have been completed in recent years and identify what is needed in the future.

Airport Security

Since September 11, 2001, greater attention has focused on security at the nation's major airports. In Massachusetts, attention on airport security has included the state's smaller, general aviation airports as well. MassDOT oversees and regulates the 39 public-use airports in Massachusetts, including the Massachusetts Port Authority (MassPort) oversight of the Boston Logan International Airport, Laurence G. Hanscom Field, and Worcester

Table 8-3: Turners Falls Airport Capital Improvement Program

Project (with expected federal fiscal year of the start of construction)	Projected Total Cost	Federal Funding (90% of cost)	State Funding (5% of cost)	Local Funding (5% of cost)
Airport Master Plan Update (FFY2016)	\$300,000	\$270,000	\$22,500	\$7,500
Terminal Building Upgrade (FFY2017)	N/A	N/A	N/A	N/A
Archeological & Tribal Investigation for Runway Extension (FFY2017)	\$240,000	\$216,000	\$12,000	\$12,000
Design & Permitting for Runway Extension (FFY2018)	\$600,000	\$540,000	\$30,000	\$30,000
Extend Runway 1000' (FFY2019)	\$4,500,000	\$4,050,000	\$225,000	\$225,000
Relocate Access Road (FFY2019)	\$300,000	\$270,000	\$15,000	\$15,000
Property Acquisition (FFY2020)	\$550,000	\$495,000	\$27,500	\$27,500
Perimeter Fencing Phase II (FFY2021)	\$950,000	\$855,000	\$47,500	\$47,500
Install Automated Weather Observation Station (FFY2022)	\$600,000	\$540,000	\$30,000	\$30,000

Note: FFY = Federal Fiscal Year (October 1st through September 30th), N/A = Not Available

Source: Turners Falls Airport, October 2014.

Regional Airport. As noted previously, the two public-use airports in Franklin County are the Orange Municipal Airport in Orange and the Turners Falls Airport in Montague.

Since 2001, MassDOT established a number of policies and programs to increase airport security. MassDOT funded security enhancements at municipal airports including security fencing, access control systems, and video monitoring. MassDOT also implemented a statewide badge program for aircraft users and airport tenants, and all badges have been entered into centralized state database. Additionally, MassDOT requires each public-use airport to develop and implement an airport security plan, and that the plan be consistent with MassDOT security guidelines and regulations.

Both the Orange Municipal Airport and the Turners Falls Airport have created airport security plans for their facilities. They have both implemented the use of badges for aircraft users, and made security improvements onsite, including new perimeter fencing and gates at vehicle access points. Additional security measures undertaken at the Orange Municipal Airport include:

- Improved lighting in high security areas;
- Airport staff meets regularly with local law enforcement officials to discuss airport security issues; and
- Local police increased the number of patrols to the airport during the day and evening.

Recommendations

- Complete short-term projects (within 0-3 years) which are included in the Orange Municipal Airport's Capital Improvement Plan (CIP) or programmed for implementation, such as the reconstruction of a Taxiway D and complete the Airport Master Plan Update and Part 77 Aeronautical Study, as well as the construction of a new Terminal Building.
- Implement mid-term projects (within 4-6 years) which are included in the Orange Municipal Airport's CIP, such as the construction of obstruction lights.
- Continue pursuing long-term (beyond 6 years) improvements at the Orange Municipal Airport, including the reconstruction of Runway 01-19, Route 2 tree clearing and gravel access road.
- Complete short-term projects in the Turners Falls Airport's CIP, such as completion of taxiway improvements and completion of the Airport Master Plan Update.
- Implement mid-term projects (within 4-6 years) which are included in the Turners Falls Airport's CIP, such as the archeological and tribal investigation, design and

permitting and construction for the proposed 1,000 foot runway extension, and the relocation of the access road.

- Continue pursuing long-term improvement projects at the Turners Falls Airport, such as the property acquisition, Phase II of perimeter fencing and the installation of an automated weather observation station.
- Completion of Airport Master Plan Updates and continued review and updating of the Capital Improvement Plans for the Turners Falls and Orange Municipal Airports as necessary to reflect changing airport conditions, updated funding and cost figures, and revised project timetables.
- Continue promoting the expansion of activities and facilities at the Turners Falls Airport and Orange Municipal Airport, within the framework of the airports' plans, that will help promote and sustain the airports' financial self-sufficiency, and that will serve regional business interests and support economic development in the region.



View of Franklin County from an airplane.

Franklin County Massachusetts

Airports

	Orange Municipal	
Runway:	01-19	14-32
- Dimensions (feet)	5,000 x 75	4,801 x 75
Annual Operations:	33,025	
Aircraft Operations Mix:		
- Single-engine	65%	
- Multi-engine	20%	
- Small jet	15%	
Based Aircraft:	74	

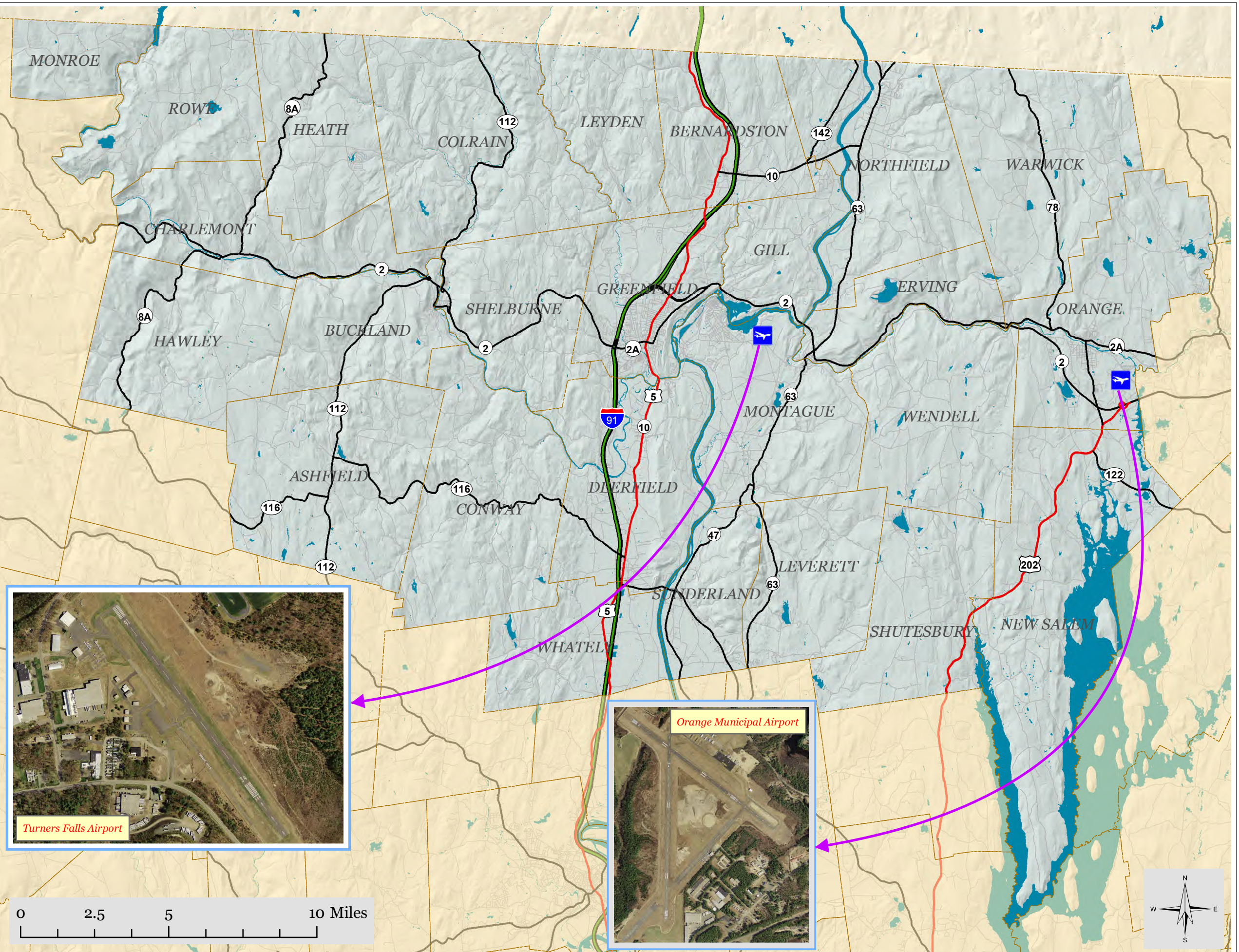
Source: Orange Municipal Airport Manager, 2015

	Turners Falls Airport
Runway:	16-34
- Dimensions (feet)	3,200 x 75
Annual Operations:	17,600
Aircraft Operations Mix:	
- Single-engine	96%
- Multi-engine	4%
- Small jet	0%
Based Aircraft:	30

Source: Turners Falls Airport Manager, 2015



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



9

Transit & Paratransit Services



2016 Regional Transportation Plan

9 Transit and Paratransit Services

Because Franklin County is the most rural region in Massachusetts, it is difficult to effectively meet residents' transportation needs through fixed transit routes. The consequence is a limited public transit network and a region that is heavily dependent upon the personal automobile. This can be challenging for the estimated seven percent of households in Franklin County that do not have access to a vehicle, or those who are limited in their driving, such as the elderly.

Despite the vast geographic area of the county and its rural character, there is a growing demand for increased public transit options. Through public outreach conducted during the development of this Regional Transportation Plan (RTP), as well as outreach conducted for other transit-related projects in the county, it is clear that there is a strong desire and need for increased and improved transit services in the region. By far, the most common and frequent comment received about transportation in the region is for expanded bus service.

The parts of the region with the best transit access and more service are typically located in the larger town centers and downtown areas that have the highest population densities, such as: Greenfield, Turners Falls, Sunderland, Deerfield, and Orange. Sparsely populated areas have less transit access due to the higher cost of providing services to a more dispersed population with limited funds. A lack of secure long-term funding is a critical challenge to providing public transit in Franklin County. One of the most popular bus routes in the region, Route 32, has no secure long-term funding.

The role of the FRCOG in the context of regional public transit access is to work with the regional transit agencies and MassDOT to help with the following tasks:

- 1) provide the best transit services possible;
- 2) expand existing services to meet resident and worker needs as feasible;
- and 3) ensure that transit planning and programming activities in Franklin County are consistent with the principles of MassDOT's transportation vision, as clarified in its *YouMove* planning initiative.



FRTA Bus at the John W. Oliver Transit Center

The Franklin Regional Transit Authority (FRTA) provides the majority of public transit services to Franklin County with some services provided by the Pioneer Valley Transit Authority (PVTA). A total of eight fixed bus routes currently operate within Franklin County. All the towns in Franklin County except for Monroe, Sunderland, and Leverett are members of the FRTA. Sunderland and Leverett are members of the PVTA. Additionally, both the FRTA and PVTA provide paratransit and demand response service to their respective towns with the level of the service varying significantly by community. A map of the service areas for the FRTA is contained at the end of this chapter.

Fixed Route Transit Services

Fixed route transit service in Franklin County is provided by the FRTA and the PVTA. The FRTA operates seven of the fixed service routes in Franklin County, including the Corporate Shuttle. The PVTA operates two fixed service routes which travel through the Franklin County communities of Sunderland and Deerfield. Transit routes operated by the FRTA are limited to weekdays and non-holidays, while one of the two routes operated by the PVTA operates also on Saturdays. The PVTA does not operate on major holidays, but does run on reduced schedules for minor holidays.

Franklin Regional Transit Authority (FRTA)

The FRTA is the primary transit agency for Franklin County. The FRTA's service territory extends into Hampshire, Hampden, and Worcester Counties. The FRTA serves the most rural and geographically largest area of all the Regional Transit Authorities (RTAs) in Massachusetts. The service area comprises a total of 41 towns and includes 23 towns in Franklin County and extends south to Blandford and Southwick in Hampden County, west to Middlefield in Hampshire County, and east to Petersham in Worcester County.

The FRTA, like other RTAs, is funded from a combination of federal, state, and local funding sources as well as from revenue generated from fares. Each of the towns that are serviced by the FRTA pays a local assessment. This amount is based on: the



**John W. Olver Transit Center in Greenfield
(Credit: John Linden)**

number of one-way trips associated with demand response transportation in the town and the number of vehicle revenue miles of fixed route service in each town.

The FRTA presently has 42 transit vehicles in total, which includes 7 buses, 10 minibuses, and 25 vans, all of which are wheelchair accessible, and four service vehicles. All of the buses used for fixed route service have bicycle racks on the front of the buses. The bicycle racks hold two to three bicycles each and are on the buses year-round. The FRTA operates out of the newly constructed John W. Olver Transit Center located in downtown Greenfield. The JWO Transit Center is the first zero net energy transit center in the nation and houses the administrative offices of the FRTA and the FRCOG. It is located adjacent to an Amtrak-operated passenger rail line and accommodates intercity bus service. All of the fixed transit routes originate out of the JWO Transit Center. The building provides passenger amenities including rest rooms, indoor waiting area, a small café, WiFi service, and bicycle parking.

Table 9-1: FRTA Routes and Route Frequency

Route	Primary Destination(s) from Downtown Greenfield	Number of Round-Trips on Weekdays	Fare (One-way)
21	Greenfield	9	\$1.00
22	Montague	8	\$1.00
23	Amherst	2	\$3.00
31	Northampton	6	\$1.50
32	Orange	7	\$1.50
41	Charlemont	4	\$1.50
Corp	Corporate Center Shuttle	5	\$1.00

Table 9-1 outlines current FRTA bus route schedules, frequency, and fare schedule. Bus fares for FRTA fixed route service currently ranges from \$1.00 to \$3.00. Passengers with valid Statewide Access Passes, ADA cards, Medicare cards, and persons over 60 years old ride for half of the listed fare. Passengers with a valid MA Commission for Blind card, FRTA Veteran's photo ID card, or a valid Department of Veteran's Affairs photo ID card ride for free. Children under the age of five ride free when accompanied by a fare-paying adult. In June of 2010, the FRTA installed electronic fareboxes on all fixed route transit buses. These fareboxes are intended to make riding the bus easier and more convenient by allowing riders to purchase a magnetic fare ticket that can be used for multiple rides. Additionally, the electronic fareboxes also accept cash. In 2013, the FRTA installed RouteMatch System technology so that passengers can track buses in real time using their phones or the internet.

FRTA's annual ridership saw a decline between Fiscal Year (FY) 2012 and FY 2014. Ridership declined slightly between 2012 and 2013 and then dropped more significantly between 2013 and 2014. This latter reduction in ridership can be mostly explained by the fact that during this time the Town of Athol switched to the MART service area away from the FRTA's. Since 2014, the fixed route ridership may be showing an increase. The first quarter of FY 2015 showed a 55% increase (17,219 additional riders) when compared to the first quarter of FY 2014 (July through September). Table 9-2 shows the annual ridership rates for the FRTA routes for the fiscal years (FY) 2012 to 2014.

Table 9-2: FRTA Ridership Statistics, FY 2012 to FY 2014

Route	Annual Ridership FY 2012	Annual Ridership FY 2013	Annual Ridership FY 2014	Percent Change from FY 2012 to FY 2014
Route 21 (Greenfield)	27,306	27,923	29,422	+7.75%
Route 22 (Montague)	25,771	25,875	25,277	-1.92%
Route 23 (Amherst)	5,242	5,088	2,772	-47.12%
Route 31 (Northampton)	30,316	33,163	31,480	+3.84%
Route 32 (Orange)	39,132	35,029	24,953	-36.23%
Route 41 (Charlemont)	9,616	8,130	8,176	-14.97%
Total	137,383	135,208	122,080	-11.14%

Source: Franklin Regional Transit Authority, April 2015.

FRTA Fixed Route Descriptions

Route 21: Greenfield Community Route

Route 21 (Greenfield Community Route) traverses around Greenfield, reaching the majority of Greenfield's primary shopping destinations and high density residential areas. Some major destinations in downtown Greenfield include: the Franklin Medical Center, Cherry Rum Plaza, Greenfield High School, Leyden Woods, Greenfield Community College (GCC), the Big Y/Home Depot shopping centers, and the Greenfield Corporate Center. The one-way fare for this route is \$1.00 and the entire route takes approximately one hour and fifteen minutes roundtrip. The schedule for this route consists of nine runs per day with the earliest run leaving the JWO Transit Center at 8:00 A.M. and the latest leaving at 6:00 P.M.

Route 22: Montague/Greenfield Route

Route 22 (Montague/Greenfield Route) provides service between the communities of Greenfield and Turners Falls, with limited service also provided to Montague Center and Millers Falls. Route 22 begins at the JWO Transit Center in Greenfield and travels to major

stops that include Farren Care Center, Turners Falls High School, and Turners Falls Industrial Park. The schedule for this route currently consists of eight runs per day with the earliest run leaving JWO at 6:15 A.M. and the latest leaving at 6:30 P.M. Of these eight runs, three provide additional service to Millers Falls and Montague Center.

Route 23: Amherst/ Greenfield Route

Route 23 (Amherst/Greenfield Route) connects Greenfield to the University of Massachusetts Amherst campus, via Turners Falls, Millers Falls, and Montague Center. The schedule for this route currently consists of two round-trip runs per day with the first run leaving the JWO Transit Center at 6:45 A.M. and the last leaving at 3:05 P.M. This route has the lowest ridership levels of the FRTA system.

Route 31: Northampton/Greenfield Route

Route 31 (Northampton/Greenfield Route) connects the communities of Greenfield, Deerfield, Whately, Hatfield, and Northampton. Starting at the JWO Transit Center in Greenfield, Route 31 travels to Deerfield where its stops include Frontier High School, South Deerfield Center, and Deerfield Industrial Park. After stopping in Deerfield, Route 31 proceeds on to Whately, with a stop at the newly constructed MassDOT Park & Ride, and continues on to Northampton, stopping at the Big Y/Wal-Mart Plaza and the Academy of Music. The one-way fare for this route is \$1.50 and the entire route takes approximately an hour and a half roundtrip. The schedule for this route currently consists of six round-trip runs per day with the earliest run leaving Court Square at 5:15 A.M. and the latest leaving at 5:15 P.M. This route connects with a PVRTA route. This route was the most popular route in FY 2014 with 31,480 riders.

Route 32: Orange/Greenfield Route

Route 32 (Orange/Greenfield Route) serves to connect several communities along Route 2 east, from Greenfield to Orange. Route 32 also connects major destinations for users, including: the Franklin Medical Center, the Orange Health Center, and the Wal-Mart and Hannafords Shopping Centers. The one-way fare for this route is \$1.50 and the entire route takes approximately two hours roundtrip. The schedule for this route currently consists of seven round-trip runs per day with the earliest run leaving the JWO Transit Center at 5:00 A.M. and the latest leaving at 5:15 P.M.

This route started as the G-Link Route in October in 1999 and was the result of a joint collaboration between the FRTA, FRCOG, and the Montachusett Regional Transit Authority (MART) to improve access to jobs. The entire G-Link service operates between Greenfield and Gardner, with connections to Fitchburg and to the commuter rail line running between Fitchburg and Boston. The FRTA runs the western portion of the service, now called Route

32, and MART runs the eastern portion of the service and the connecting bus service to Fitchburg. The two RTAs connect at the Hannafords in Athol for passengers to transfer.

Route 41: Charlemont/Greenfield Route

Route 41 (Charlemont/Greenfield Route) primarily serves western Franklin County, connecting the communities of Greenfield to Shelburne, Buckland, and Charlemont with four runs per day. Route 41 starts at the JWO Transit Center in Greenfield and travels along Route 2 towards Shelburne Falls. After Shelburne Falls, Route 41 either travels to Mohawk High School (the first route of the day) or to the Charlemont Park and Ride lot (the remaining runs). The other stops include the Academy at Charlemont and Charlemont Center. The earliest run departs JWO at 6:45 A.M. with the latest run departing at 4:45 P.M. The one-way fare for this route is \$1.50 and the entire route takes approximately two hours roundtrip.

The Pioneer Valley Transit Authority (PVTA)

The Pioneer Valley Transit Authority (PVTA) is based in Springfield, Massachusetts and is the regional transit authority for the Pioneer Valley. The PVTA is the largest regional transit authority in Massachusetts with a fleet of 174 buses and 144 vans. The PVTA has 24 member towns in Hampshire, Hampden, and Franklin Counties and provides fixed-service bus routes as well as demand-response services for the elderly and disabled.

The PVTA operates two main transit routes in Franklin County: Route 31 (Sunderland/South Amherst) and Route 46 (South Deerfield/Whately Park & Ride/UMass). Route 31 connects the UMass campus to Sunderland Center with multiple stops on the route. Route 46 links the UMass campus to South Deerfield Center as well as several stops along the way. The fare for both of these routes is \$1.25 for a one-way ticket, although students, faculty and staff of the Five Colleges ride for free.

PVTA Fixed Route Descriptions

The following section is a detailed description of the PVTA routes that run within Franklin County. Table 9-3 summarizes the PVTA routes that serve Franklin County.

Table 9-3: PVRTA Routes to Franklin County and Route Frequency

Route	Schedule	Number of Round-Trips on Weekdays	Number of Round-Trips on Saturday	Number of Round-Trips on Sunday	Typical Weekday Peak Frequency
Route 31 (Sunderland/South Amherst)	Regular	55	17	12	15 minutes
Route 46 (South Deerfield/Whately Park & Ride/UMass)	Regular	6	N/A	N/A	Irregular

Note: PVRTA runs a reduced schedule when UMass is not in session.

Route 31: Sunderland/South Amherst

Route 31 provides transit services between the communities of South Amherst and Sunderland. Route 31 operates from 7:22 A.M. until at least midnight every night, with service extending to 1:00 A.M. on Thursdays, Fridays and Sundays, and to 2:00 A.M. on Saturdays. Route 31 is traditionally the PVRTA route with the highest ridership. In 2013, Route 31 carried approximately 5,114 daily passengers. This is the third highest of weekday routes in the PVRTA system. Route 31 also has an average of 67 riders per trip, which is more than any other PVRTA route. While its ridership is very high, Route 31 is also greatly dependent upon the academic schedule, which decreases significantly when UMass is not in session. As a result, PVRTA runs a reduced schedule during these times.

Route 46: South Deerfield/Whately Park & Ride/UMass

Transit service between South Deerfield and UMass is provided by Route 46. This route includes a stop at the Whately Park and Ride. Route 46 operates from 7:00 A.M. until 10:30 P.M. on Monday through Friday. There is no weekend service on this route. In 2013, Route 46 carried 111 passengers per weekday, which is the fourth lowest ridership of any PVRTA route. The PVRTA also runs a reduced schedule for this route when UMass is not in session.

ADA Paratransit Transit and Demand Response Services

The FRTA and PVRTA each offer paratransit and demand response services, sometimes referred to as dial-a-ride van transportation, to elderly and disabled residents in their member communities. In all Franklin County communities, transportation through the FRTA or PVRTA is available for seniors age 60 and over and for some people with disabilities that affect their ability to drive and use regular fixed-route transit service. All of the PVRTA and FRTA buses and vans are wheelchair accessible. Priority for service is given to people with disabilities and seniors and for essential purposes, such as medical care.

Under the American with Disabilities Act (ADA) of 1990, paratransit services must be provided in all areas with local fixed route bus services for people who can't use the local bus system due to their disability. The ADA seeks to provide people with disabilities the same access to public transportation as people without disabilities. The FRTA's Paratransit Services are for disabled individuals who are available within three-quarters ($\frac{3}{4}$) mile of a fixed route corridor and cannot navigate or access the provided fixed route service due to their disability.

There are several limitations to ADA transportation services in Franklin County, largely a result of its rural nature. Large land area and low population density are the primary factors for the county's limited fixed-route transit services and as a result, there are no requirements to provide ADA transportation services for at least half of Franklin County towns, due to the lack of fixed bus route service in the region. Much of the van service which is provided in Franklin County is, therefore, demand response service, which is optional and offered at the regional transit authorities' discretion. For the towns with fixed-route transit services, ADA service is available to qualifying residents during the regular route's hours of operation.

The FRTA and PVRTA each contract with local private van companies to provide both the mandated ADA paratransit service and optional demand response service within their regions. For the FRTA, many of the providers are local Councils on Aging (COAs) that also offer other services to seniors. Franklin Transit Management (the operating company for the FRTA) provides the ADA service. Table 9-4 summarizes the paratransit/demand response service that is available by town in Franklin County.

Table 9-4: Paratransit Service in Franklin County			
Town	Paratransit Service	Demand Response Service Provider	MedRide Service Provider
Ashfield	No	Shelburne COA	FRTA
Bernardston	No	Bernardston COA	FRTA
Buckland	Yes ¹	Shelburne COA	FRTA
Charlemont	Yes ¹	Shelburne COA	FRTA
Colrain	No	Shelburne COA	FRTA
Conway	No	Shelburne COA	FRTA
Deerfield	Yes ¹	FTM	FRTA
Erving	Yes ¹	Erving COA	FRTA
Gill	Yes ¹	FTM	FRTA
Greenfield	Yes ¹	FTM	FRTA
Hawley	No	Shelburne COA	FRTA

Town	Paratransit Service	Demand Response Service Provider	MedRide Service Provider
Heath	No	Shelburne COA	FRTA
Leverett	Yes	Amherst COA	FRTA
Leyden	No	No	FRTA
Monroe	No	No	No
Montague	Yes ¹	FTM	FRTA
New Salem	No	Orange COA	FRTA
Northfield	No	Bernardston COA	FRTA
Orange	Yes ¹	Orange COA	FRTA
Rowe	No	Shelburne COA	FRTA
Shelburne	Yes ¹	Shelburne COA	FRTA
Shutesbury	No	No	FRTA
Sunderland	Yes ¹	Hulmes Transportation	No
Warwick	No	Orange COA	FRTA
Wendell	Yes	Orange COA	FRTA
Whately	Yes ¹	FTM	FRTA

Notes:

1: ADA Paratransit services are provided for disabled individuals who are available within $\frac{3}{4}$ mile of a fixed FRTA route corridor and cannot navigate or access a regular fixed route due to their disability.

Sources: Information was obtained from the Franklin County Home Care Corporation, FRTA, and PVTa.

Human Service Transportation

Additional transportation services, such as van transportation, are offered to qualifying Franklin County residents through the Department of Developmental Services (DDS), Department of Public Health (DPH), and the Division of Medical Assistance (DMA), as well as other various state-level human service agencies. Regional transit authorities arrange transportation by request for elders and disabled residents in the area through a network of public and private transportation providers. The travel that can be funded through these programs is often limited to a few specific types of trips, such as medical trips or transportation to job training. Regional transit authorities generally coordinate the transportation services for the State's human service agencies. Transportation services for MassHealth, DMA, and DPH in Franklin County are currently coordinated by the FRTA and provided by private transportation operators.

Community Transit Services

Community Transit Services (CTS) was a major private transportation provider in the region. It was established in 1998 to provide transportation for work communities in the Athol-Orange areas and to help improve access to jobs for low-income individuals. However, in 2013 the funding for the program was cut and its service was folded into the Montachusett

Regional Transit Authority (MART) as a reduced dial-a-ride service for the Orange/Athol area. The discontinuation of this curb-to-curb public transportation service for the Northern Tier region along Route 2 is a major loss to the low income and other transit-reliant households.

Private Carriers and Other Transportation Services

Bus Service

Peter Pan Bus Lines and Greyhound Lines jointly operate service to Franklin County with two trips to Greenfield and Deerfield each day. The Greenfield station is located at the John W. Olver Transit Center and the Deerfield stop is located at Savage Market on Route 5/10. Passengers can switch buses in Amherst and Springfield for other destinations, including: Worcester, Framingham, Boston, and points in Connecticut and New York.

Taxi Service

There is currently only one cab company in the Greenfield area, About Town Taxi (none of their vehicles are handicapped accessible). There are also a few other cab companies based in towns close to the region and provide service to some Franklin County towns, such as Athol Taxi in Athol. Taxi companies also operate from Gardner to the east; North Adams to the west; Winchester, New Hampshire to the north; and Northampton and Amherst to the south.

Other Private Services

There are several limousine services in Franklin County. There are a larger number of van and charter bus services based in Franklin County. One of the largest bus services in the county is F.M. Kuzmeskus, Inc, which is based in the Town of Gill.

Public Transit Coordination

Regional Coordinating Councils

In 2012, Massachusetts established a Statewide Coordinating Council on Community Transportation with the objective of coordinating public transit services and human services throughout state. As part of this effort, Regional Coordinating Councils (RCCs) were established throughout the Commonwealth in 2014 – including a Franklin County RCC. The Franklin County RCC is composed of human service providers throughout Franklin County and the North Quabbin Region and meets bimonthly in conjunction with the FRTA Transit Advisory Committee. In 2015, the RCC created a Franklin Regional Transportation Inventory of all transportation services offered in Franklin County. The inventory also includes information about the cost, eligibility, and service area of all the transportation providers. The goal of the RCC is to finalize the inventory and distribute it to all human service providers in the region to better assist the needs of their clients. The inventory also provides

an excellent basis for transportation coordination in the region as it highlights the overlaps and gaps in service that currently exist. The inventory can be found at the end of this chapter.

Coordinated Public Transit-Human Services Transportation Plan

The FRCOG has created a “Coordinated Public Transit-Human Services Transportation Plan for Franklin County” that identifies transportation providers in the region and key public transit service gaps in Franklin County. In 2014, the FRCOG identified the following transportation needs:

- Implementing additional fixed transit routes to allow access to employment, education, and services;
- Implementing more frequent fixed route service to accommodate passengers’ needs to move between employment, childcare, and services in a timely manner;
- Implementing more evening transit service to allow access to employment, education, and services;
- Beginning weekend transit service to allow access to employment, education, and services;
- Improving connectivity between transportation providers serving Franklin County so that users can more easily transfer and move from Point A to Point B as efficiently as possible;
- Creating better links between transportation modes;
- Providing transportation services to residents located in the more rural areas of Franklin County far from fixed transit routes;
- Marketing of existing transportation services;
- Continuing the maintenance of vehicles at or above a state of good repair; and
- Acquiring modern accessible service equipment and technical applications.

Current Activities and Future Plans

The FRCOG is committed to working to ensure that all Franklin County residents have access to transportation facilities and services. To do so, FRCOG coordinates with the FRTA to explore ways to improve the region’s bus system and work specifically to support better access to jobs, training, and needed services for low-income residents.

Comprehensive Service Analysis

The FRTA is currently completing a Comprehensive Service Analysis (CSA) that examines the existing fixed route system and makes recommendations for improvement. The final CSA and its recommendations are due to the state legislature by June 30, 2015. At the beginning of the CSA planning process, the FRCOG partnered with the FRTA to conduct extensive public outreach in Franklin County to better understand the transit needs of the public. The outreach and its findings are summarized in the FRCOG report, “*Summary of*

Public Input Gathered at FRTA Community Conversations” (June 2014). Overall, it was very clear that the region wants:

- More frequent bus service;
- Extended weekly hours (specifically evening service); and
- Weekend service (specifically Saturday service).

Recommendations for Transit and Paratransit Services

Short Term Recommendations

- Promote current paratransit and demand response services among elder and disabled residents who could benefit most from these services.
- Promote the Park and Ride lots in the region as a way to bolster bus ridership.
- Coordinate between the FRTA and the PVTA to investigate options for improved connections between the two regions.
- Work with major employers and industrial parks in the region to better understand various shift times and possible service to these locations.

Long Term Recommendations

- Continue to work with the FRTA, PVTA, and the MART to keep area legislators informed about the regional importance of Route 32 and about the demand for expanding the routes to include additional runs and evening and weekend service to better assist residents with access to employment, education, and training opportunities. Importantly, work to obtain permanent funding for Route 32.
- Improve connections between Franklin County and UMass Amherst, the region's largest employer.
- Consider ways FRTA could coordinate with GCC, FCHREB, and CDC to create a workforce development-focused shuttle. One example is exploring the feasibility of contributions from GCC toward the cost of fixed route service by way of students' fees being charged as part of the tuition.
- Consider extensions of the fixed route system to serve the West County (Rt. 116) and North County (Rt. 5/10) regions.

Ongoing Recommendations

- Support the reinstatement of evening and weekend transit services to meet transit rider demand.

- Continue to work with the regional transit authorities and other transportation providers to: monitor and evaluate routes; to address unmet transportation needs and current problems with connectivity between routes and inter-regional service connections.
- Expand current outreach and publicity efforts to provide information about FRTA transit services and to encourage bus usage. Outreach efforts should target the populations who are most likely to use transit services and to need transit assistance, such as low-income residents, disabled residents, and the elderly. Outreach efforts should also focus on the general workforce commuters.
- Support the provision of paratransit and demand response services for elderly residents and riders with disabilities, and work to expand van transportation availability, especially in areas with less than daily services and as the elderly population in the region grows.
- Conduct outreach with the communities within the FRTA service area about the fiscal costs associated with services and how best to match their level of need with financial concerns.



Riders waiting to board a FRTA bus at the John W. Olver Transit Center.

Franklin County Massachusetts

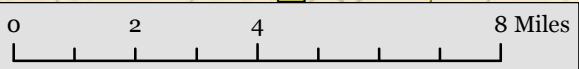
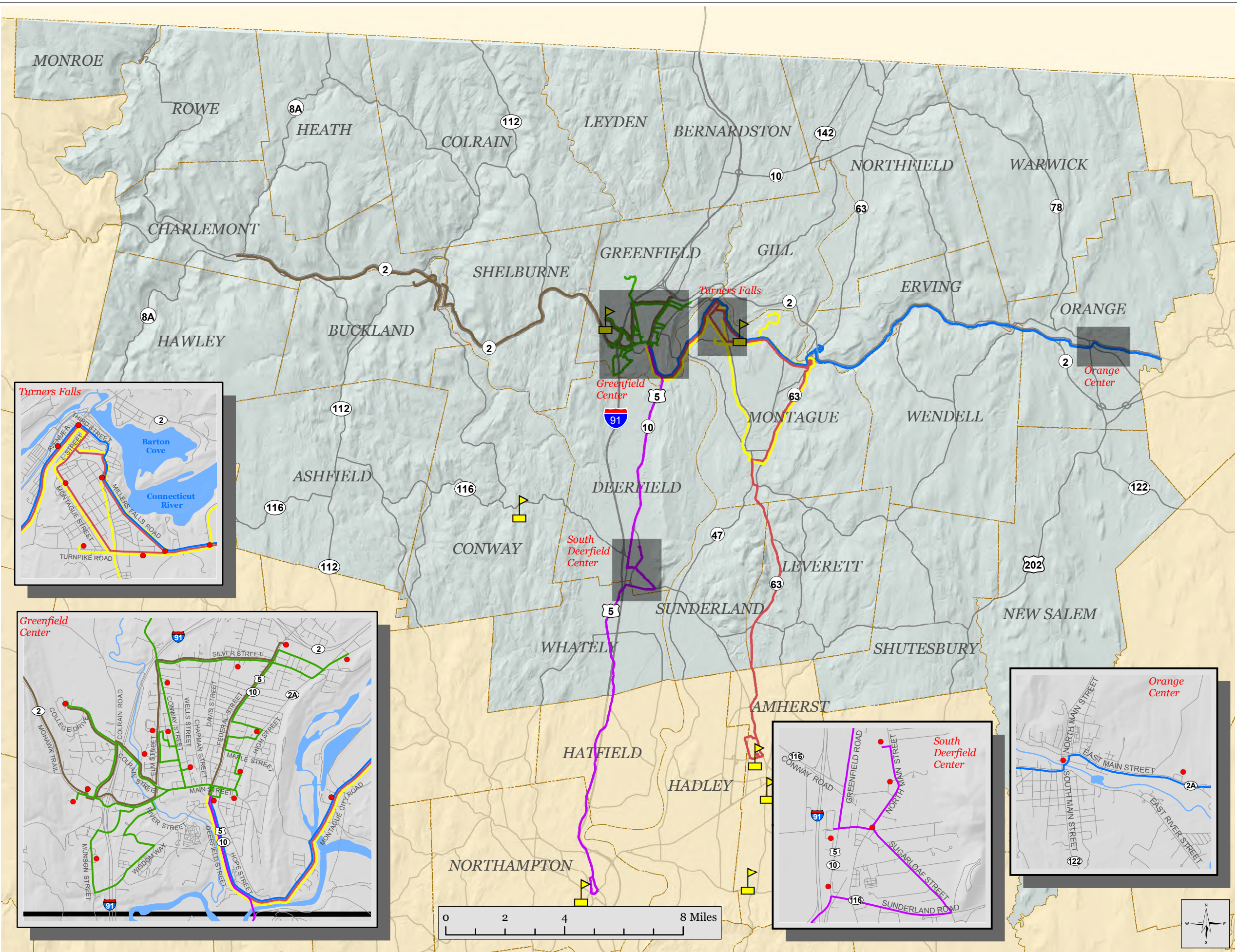
Transit Routes

- Route 21
- Route 22
- Route 23
- Route 31
- Route 32
- Route 41
- Transit Stop
- College
- Major Road
- Town Boundary

Franklin Regional Council of Governments



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



10

Livability: Bicycle & Pedestrian Facilities



2016 Regional Transportation Plan

10 Livability: Bicycle & Pedestrian Facilities

Bicycling and walking are integral components of the transportation system in Franklin County. This has been reinforced by the completion of a number of planning documents and projects for the region. These varied planning projects include tasks that outline future bicycle and pedestrian infrastructure projects; incorporate initiatives for promoting healthy transportation options; and assess potential improvements that could be incorporated into existing infrastructure projects to better accommodate bicycling, walking and complete streets. The plans include:

- A Safe Routes to School (SRTS) evaluation (2011);
- A Regional Complete Streets Project (2012);
- Updated Franklin County Bikeway maps (2013 update);
- A Regional Complete Streets Plan Part 2 (2014);
- A Tri-state Connecticut River Scenic Byway Bikeway map (2014);
- A Feasibility Study of Potential for Rail with Trail along the Connecticut River Main Line (2014); and
- An Alternative Transportation Map (2014).

Planning for bicycling and walking facility improvements are also routinely incorporated into local and regional plans completed by the FRCOG, such as municipal open space and recreation plans, scenic byway corridor management plans, and municipal master plans. Additionally, in June 2013 the *Franklin County Regional Plan for Sustainable Development* was completed. The Plan outlined goals for meeting regional needs and includes as one of the top transportation goals: “increasing bicycle and pedestrian facilities and promoting walking and biking in the region.”

The FRCOG also embraces the principles of complete streets in transportation planning. Complete streets are designed and operated to enable safe access for all users including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete streets are safe for people to walk/bicycle to and from their destinations and also allow buses to run more efficiently. Two regional complete streets planning projects have been completed and are detailed in this chapter.

Guiding Policies and Programs

There are a number of national and state policies and programs that emphasize bicycling and walking to create livable places. These policies encourage (and in some cases mandate)

considerations of bicycle and pedestrian transportation in design. The FRCOG has incorporated the intent of these initiatives into regional transportation planning. The following summaries of policies is intended to provide background and context for bicycle and pedestrian planning for the region.

National Livability Initiative and Partnership for Sustainable Communities

As part of the federal Department of Transportation's Livability Initiative, the Federal Highway Administration (FHWA) has worked with the [Partnership for Sustainable Communities](#), an interagency collaboration of HUD, DOT and EPA, to support livable communities. According to the FHWA, "livability is about tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safe streets. This includes addressing safety and capacity issues on all roads through better planning and design, maximizing and expanding new technologies such as ITS and the use of quiet pavements, using Travel Demand Management approaches to system planning and operations, etc."¹

Healthy Transportation Compact

As part of the 2009 Transportation Reform Legislation, Massachusetts also launched the Healthy Transportation Compact. It is an inter-agency initiative designed to facilitate transportation decisions that balance the needs of all transportation users, expand mobility, improve public health, support a cleaner environment, and create stronger communities. MassDOT views the Compact as an opportunity to strengthen its commitment to public health and increased access for bicyclists and pedestrians.

Statewide Mode Shift Goal

In October 2012, MassDOT announced a statewide mode shift goal of tripling the share of travel in Massachusetts by bicycling, transit and walking by 2030. Through this goal MassDOT aimed to foster improved quality of life by improving the environment and preserving capacity on our highway network. In addition, the goal was intended to achieve positive public health outcomes by providing more healthy transportation options.

Healthy Transportation Policy Directive

The Healthy Transportation Policy Directive was signed in 2013, in order to further the Commonwealth's Healthy Transportation Compact and Mode Shift Goal by ensuring that all

¹ Federal Highway Administration (FHWA). Livability Initiative. www.fhwa.dot.gov/livability. Last updated 6/10/10.

MassDOT projects are designed and implemented in a way that allows access to safe and comfortable healthy transportation options. The directive defines Healthy Transportation modes as walking, bicycling and taking transit, and lays out specific transportation project planning and design requirements to ensure that healthy transportation modes are considered equally as potential solutions.

Massachusetts Complete Streets Certification Program

The 2014 Transportation Bond Bill establishes a complete streets certification program to encourage municipalities to regularly and routinely include complete streets design elements and infrastructure on locally-funded roads. The bill authorizes \$50 million in funding and specifies the creation of a “Complete Streets Certification Program”.

Bicycle Facilities Planning

Statewide Planning Efforts

The state is currently working to update the state bicycle plan. The previous update of the *Massachusetts Bicycle Transportation Plan* was completed in 2008. It provided a complete inventory of existing on-road and off-road facilities, planned projects, and long-term facility proposals. The 2008 Plan also recommends the establishment of a 740-mile, seven corridor Bay State Greenway (BSG) network consisting of on-road and off-road statewide facilities. As a result of that plan, the section of the BSG’s Connecticut River Valley Corridor (East) that travels through Franklin County, primarily on Route 63, was used as a pilot sign project for the installation of Bay State Greenway signs.



**Baystate Greenway
signs on Rt. 63 in
Northfield**

Franklin Regional Bicycle Planning

There are challenges associated with the use of bicycles for transportation in Franklin County. The varied geography and topography can be an obstacle. The rural development patterns in some parts of the region mean that individuals may have to travel longer distances to work and to run routine daily errands. These challenges are taken into account when developing bicycle routes and facilities for the region. However, the region’s geographic conditions and topographic features also contribute to the appeal of bicycling in Franklin County. There are many rural roads with low traffic volumes and picturesque rural landscapes that provide for un-paralleled riding conditions elsewhere in the state.

In 2009, the FRCOG completed an update of the 1993 *Franklin County Bikeway Plan*. The 1993 Plan identified the route of the original Franklin County Bikeway network which travels through the central section of the county along the Connecticut River Valley. As of 2010, this approximately 44-mile network had been completed. The *2009 Bikeway Plan Update* expanded the original bicycle network to cover the entire county and to link to neighboring regions. The Update identified bicycling links to Hampshire County, Berkshire County, Worcester County, Vermont, and New Hampshire. It also expanded and diversified the regional objectives to include recreation, tourism, and quality of life related bicycling issues. Additionally, the Update considered the needs of those who are bicycling for different purposes including commuters, students, store patrons, outdoor enthusiasts, and visitors to the region. A map of the Franklin County Bikeway can be found at the end of this chapter.

Existing Bicycle Facilities

Franklin County Bikeway

The initiative to design and construct the Franklin County Bikeway, a regional bicycle network, began thirty years ago. It was focused on the original 44-mile section of the Franklin County Bikeway that consists of both on and off-road bicycle routes centered along the Connecticut River. At this time, the original sections of the Franklin County Bikeway are constructed. The following are descriptions of the constructed off-road and shared roadway facilities:



**The Franklin County
Bikeway Logo**

The Riverside Greenway (Greenfield)

The Riverside Greenway is a one-mile off-road bikepath located in the Town of Greenfield. This path connects a densely populated residential area with a heavily used public recreation facility. The path is owned and maintained by the Town of Greenfield and includes a bicycle and pedestrian bridge over the Green River.

East Mineral Road Bridge (Montague and Erving)

The East Mineral Road Bridge was reconstructed for use as a bicycle and pedestrian bridge. The former vehicle bridge crosses the Millers River from East Mineral Road in Montague to River Road in Erving, and provides an important link in the Franklin County Bikeway network. It provides bicyclists and pedestrians access north and south without having to cross Route 2 at grade. Route 2 is not recommended for bicycle travel because of the high vehicle volumes and speeds.

Canalside Trail (Deerfield and Montague)

The Canalside Trail is located in the Towns of Montague and Deerfield. It links the Connecticut River Great Falls Discovery Center and Unity Park in the Village of Turners Falls

in Montague to McClelland Farm Road, located off of River Road, in northeast Deerfield. It is a 3.27-mile off-road paved multi-use path which travels next to the Connecticut River Canal in Turners Falls and along an abandoned rail corridor including a railroad bridge over the confluence of the Deerfield and Connecticut Rivers in Montague City and Deerfield. There is parking at each end of the Canalside Trail (in Turners Falls and in East Deerfield).

Signed Shared Roadway Sections of the Franklin County Bikeway

The following Franklin County Bikeway shared roadway routes are marked with Franklin County Bikeway trailblazing signs:

- The Northfield Connector is an 11-mile route that links Montague and the East Mineral Road Bridge to the Northfield Mountain Recreation and Environmental Center, downtown Northfield, and inter-regional routes in New Hampshire.
- The Greenfield-Montague Loop Route connect the Canalside Trail, the Northfield Connector, and the Riverside Greenway.
- The Connecticut River Route travels along the Connecticut River from Montague to Sunderland on Greenfield Road and Meadow Road in Montague, and Falls Road and Route 47 in Sunderland.
- The Leverett-Amherst Route travels along Montague Road through Leverett Center to North Amherst.

Existing Bicycle Promotional and Advocacy Programs

In addition, the FRCOG continues to develop promotional materials and programs to educate the public about the existing facilities and encourage bicycling instead of driving. A number of map and informational resources have been developed.

Franklin County Bikeway Maps

There are three Franklin County Bikeway route maps: the Western Franklin County Bikeway Routes map, the Central Franklin County Bikeway Routes map, and the Eastern Franklin County Bikeway Routes map. The maps were most recently updated in 2013. The maps classify each route as novice, intermediate, or advanced in order to help bicyclists to determine the most suitable route to ride given their ability and physical fitness level. The maps also include information on the services available and elevation changes. In addition to the paper maps, digital maps are available on the FRCOG's website (www.frcog.org). These maps are intended for viewing on-line, and are not of a high enough resolution for large scale printing. Additionally, the bikeway route information can be viewed through Google Earth maps (the routes can be downloaded from the FRCOG website to be added to Google Earth).

Tri-State Connecticut River Scenic Byway Bike Route Map

A bicycle route map for the tri-state (Massachusetts, New Hampshire and Vermont) area of the Connecticut River Scenic Byway was completed in 2014. The FRCOG worked jointly with the Pioneer Valley Planning Commission, the Southwest Region Planning Commission (in New Hampshire) and the Windham Regional Commission (in Vermont) to develop a print map, as well as on-line versions of the map that can be viewed in Google Earth (downloadable from www.frcog.org). The project to develop this map also involved the installation of wayfinding signs along this route.

Promotional Campaign to Encourage Healthy Transportation Forms of Travel

In 2015, the FRCOG developed promotional materials to encourage Franklin County residents to shift their transportation mode from a single occupant vehicle to an alternative such as walking, bicycling or riding the bus. The promotional materials are intended to benefit all residents of Franklin County and provide a foundation for future work. An Alternative Transportation Map was created for Greenfield and Montague. This map can be easily re-created for other communities and is designed to contain all the information needed to plan for using healthy transportation options, including information about how to ride the bus and safety tips for pedestrians and cyclists.



Bicyclists in Franklin County

Proposed Future Bikeway Projects

Shared Roadway – Franklin County Bikeway Route Signs

The 2009 *Franklin County Bikeway Plan Update* identified additional shared roadway routes and potential off-road facilities throughout Franklin County. Planning work is underway to identify locations for the installation of Franklin County Bikeway logo signs on these routes. This planning work has already been completed for the routes in western and central Franklin County and work on the eastern Franklin County routes will be completed in the next year.

Bicycle/Pedestrian Bridge on Greenfield Road

The shared roadway Connecticut River Route is part of the Franklin County Bikeway network that is already marked with wayfinding signs. It travels along the Connecticut River from

Montague to Sunderland. This route uses Greenfield Road in Montague, but currently detours onto Hatchery Road, because a bridge that was over the railroad tracks was removed. A shared-use pedestrian-cyclist bridge has been designed to replace the bridge. Work on the construction of the bridge is scheduled to begin in the spring of 2015.

Canalside Trail Bike Path and Pedestrian Crossing Improvements on Montague City Road in Montague

This project will improve the crossing of the Canalside Trail on Montague City Road at Solar Avenue and Depot Street. The work will include the construction and repair of sidewalks and wheelchair ramps, improved bus stops, pavement markings, signage, pavement narrowing for traffic calming and a flashing beacon. This project is scheduled for construction in 2015.

Schell Bridge Replacement

This project will include the demolition of the existing deteriorated bridge structure, which is currently closed, and replace it with a new multi-span pedestrian bridge over the Connecticut River. The bridge design is in the preliminary stages and construction is estimated for 2020-2021. The bridge will provide a bicycle and pedestrian crossing of the Connecticut River in Northfield. It is a link in the Franklin County Bikeway, Connecticut River Scenic Byway and Bay State Greenway route networks.

Millers River Greenway (Orange and Athol)

The Towns of Orange and Athol identified the development of a bikeway/greenway along the Millers River as a priority and took initial steps towards completing a conceptual design in 2000. Since that time, other assessments and conceptual plans were completed that identified both off-road and on-road route options. Most recently, \$2 million was included in the 2014 Massachusetts Transportation Bond Bill for “the purchase, planning, design and construction of a scenic pedestrian river walk and bicycle pathway from South Main Street in the town of Athol to West River Street in the town of Orange”. A series of meetings were held during 2013 and 2014 to discuss and identify a viable bike path route between the Orange Riverfront Park and Athol. The bikeway route planning at this time has focused on an off-road route. The proposed route is approximately 6 miles long and would link the Orange Riverfront Park to the Millers River Environmental Park in Athol. A Project Need Form has been submitted to MassDOT, which is scheduled for review during the summer of 2015.

Erving – Wendell Path

During the development of the Erving Master Plan (2002) and the public participation process for the Route 2 Safety Improvement Project, the lack of alternatives to bicycling on Route 2 in Erving was noted as a community concern. It was recognized that Route 2 is not

recommended for bicyclists and pedestrians because it has a narrow and winding layout, lacks sidewalks and roadway shoulders in many locations, and has high traffic volumes and speeds. On two occasions (2002 and 2011), the FRCOG reviewed potential bicycle and pedestrian links in Erving. Possible bicycle and/or pedestrian connections, other than the use of Route 2, to link the areas of Erving known as Farley and Erving side to Erving Center were explored. Routes in Erving Center including potential connections from Mountain Road to the east and a route through the town-owned cemetery on Cemetery Road to Flagg Hill Road were assessed.

Old Farley Road in Wendell was identified as another potential off-road walking/bicycling route option. It is an existing dirt road that is located to the south of the Millers River in Wendell. The route is accessible from Arch Street off of Route 2 in Erving Center. Old Farley Road travels west along a dirt road for approximately 2 miles and connects to Posk Place in Wendell. Much of this route travels on land within the Wendell State Forest, which is owned by the Massachusetts Department of Conservation and Recreation (DCR). The trail terminates at Posk Place in Wendell near the Metacomet-Monadnock-Mattabesett (M-M-M) Trail hiking trail and is also a popular fishing location.

It is also possible that the route could continue west to Farley Road and Mormon Hollow Road and link to Wendell Road in Montague and connect to the Village of Millers Falls. Another possibility is that this route could link to the east (Sears Road) to Wendell Depot Road. An exploration of this Wendell bikeway option was reviewed in 2011. The possible routes on Old Farley Road and Sears Road were reviewed and potential issues such as environmental, historical resources and right of way were analyzed. A number of issues related to environmental permitting and right of way were outlined and recommended for further research.

Deerfield Route (Route 5/10 Bypass)

The Deerfield Master Plan (April 2000) identified a route that would provide an alternative to bicycling on Route 5/10 in Deerfield. The plan recommended the construction of an off-road bike path to the south of the Cheapside Bridge and to the west of Route 5/10. The proposed route travels near the Deerfield River to Pine Hill Road (or Old Ferry Road which is an old 1732 county road), and would provide a connection for bicyclists into Historic Deerfield. There is currently a dirt road along a portion of this route that could potentially serve as the bike trail. However, some further analysis of the feasibility of this route is needed to determine if an off-road bicycle path could be developed.

South Deerfield and Whately Improvements on Route 5/10

A section of Routes 5/10/116 in Whately and South Deerfield was examined as part of the 2012 Complete Street Plan. The area reviewed was from the intersection near the Park & Ride lot at Sunderland Road to the traffic light at the intersection of Conway Road. It is a major regional collector road. There are a number of automobile oriented businesses, large regional employers, and a Park & Ride lot that is serviced by FRTA and PVTA. There are bicyclists already using this corridor. Improved shoulders or the development of a separate bike path within the wide right-of-way were recommended to make this corridor a better place for bicyclists.

Analysis of Rail with Trails

As part of the 2013-2014 Unified Planning Work Program, the feasibility of constructing a bike path along the active Connecticut River Main Line railway right of way was completed. This route runs parallel to and provides an alternative to bicycling on Route 5/10 in Whately, Deerfield, and Greenfield. An analysis of the right-of-way and potential issues was completed. The analysis concluded that sections of the route have ample right of way and minimal design constraints, while other sections of the route would pose design challenges because of constrained right-of-way and steep slopes. Further analysis of these options and costs are needed.

Bikes on Buses and Rail

All Franklin Regional Transit Authority (FRTA) and Pioneer Valley Transit Authority (PVTA) buses that operate in Franklin County are equipped to carry bicycles. This allows the opportunity for a commuter to travel a portion of their trip by bus and a



Bicycle parking at the John W. Olver Transit Center.

portion by bicycle. Future public transportation system expansions, as well as the future development of regional rail services through the region, should consider the feasibility of allowing bicycles in order to encourage the use of bicycles as a viable form of transportation.

The newly operating Amtrak Vermonter service does not currently accommodate bikes on the train.

Bicycle Parking

The FRCOG has continued to promote and encourage the installation of additional bike parking. During the fall of 2014, the City of Greenfield and FRCOG completed a survey in downtown Greenfield to identify additional locations for parking. The FRTA has also identified a need for additional parking at its bus shelters and the John W. Olver Transit Center due to an increase in bus passengers using bicycles for portions of their trips. There is a clear continued need for bicycle parking across the region.

Pedestrian Facilities Planning Efforts

Statewide Pedestrian Plan

MassDOT is committed to promoting walking as an important mode of transportation that will help to reduce emissions and support healthy lifestyles. The 1998 *Massachusetts Pedestrian Transportation Plan* serves as a guide to state, regional, and local transportation planners to better serve walkers. MassDOT is currently working to update the Massachusetts Pedestrian Plan.

Franklin Regional Pedestrian Plan

The FRCOG completed a *Franklin Regional Pedestrian Plan* in 2010. The Plan focused on pedestrian connections within towns and the region. Town officials were surveyed about the general walking conditions and specific areas of concern or interest within the town. Additionally, pedestrian related issues at schools and senior centers were reviewed. Based on the results of the surveys and the assessment of school and senior center pedestrian access information, in depth walkability assessments were conducted at nine focus areas. The focus areas were: Bernardston Village Center, Bernardston School Road, Buckland North Street and Route 112 (Ashfield Road), Colrain Village Center (Route 112), Leverett Elementary School/Library, Orange East River Street, Orange Butterfield Elementary School, Shelburne Falls (Bridge Street/Elementary School), and Turners Falls/Sheffield Elementary School. In conclusion to the walkability assessments, specific pedestrian facility related recommendations were formulated and some of these were turned into design projects.

Existing Pedestrian Facilities

The FRCOG recognizes that there are challenges to walking and planning for walkable communities within a rural region. The distance that individuals who live in Franklin County must travel to work and/or to run errands can make walking an impractical and inefficient transportation option under some circumstances. In some areas, walking can be physically

challenging because of steep terrain and pedestrian facilities vary widely throughout the county. The more densely developed communities in Franklin County have a larger amount of pedestrian facilities on their streets than the smaller communities, but in some cases the sidewalks, curb-cuts and/or crosswalks are in need of upkeep and repair. There are also many roads in rural areas that have no sidewalks or shoulders.

Consequently, the focus of pedestrian planning in the region has been on identifying walking connections and planning for infrastructure improvements such as sidewalks, safe crosswalks, and connections to shops, services, and residences whenever possible. Additionally, as other roadway improvement projects are designed, pedestrian related issues are identified in order to include solutions in the construction.

Further, the FRCOG has focused on planning for Complete Streets as a way to identify pedestrian and bicycle infrastructure improvements that can be added to other constructions projects. As noted, two regional Complete Streets Projects were completed (2012 and 2014) that identified many pedestrian focused improvements. The details of the Complete Streets Projects and recommended improvements are discussed in the section below which details future pedestrian infrastructure improvements.

Recently Completed Pedestrian Improvements

Buckland State Street Reconstruction Project

State Street in Buckland was reconstructed during 2010-2012. The project area extended 4,000 feet from Clement Street to Route 2, and included pedestrian oriented improvements at the intersections of State Street and North Street, and State Street and Old State Street. The project also included the reconstruction of sidewalks to Americans with Disabilities Act (ADA) compliance and the improvement of crosswalks and curb-cuts throughout the project area.

Greenfield Olive Street Sidewalk and Low Impact Development Measures

Sidewalk and streetscape improvements were completed on Olive Street in Greenfield near the John W. Olver Transit Center. The sidewalk on the south side of the road was reconstructed and the curb was extended to incorporate a planting area. This area was reviewed as part of the 2012 Complete Streets Project and it was recommended that the sidewalks be widened because the roadway area was excessively wide and promoted vehicle speeding.

Future Pedestrian Infrastructure Improvements

There are several pedestrian infrastructure projects in the region that are currently being designed. The following are brief descriptions of these projects.

Buckland North Street and Route 112 Connection to Mohawk Regional School

The town of Buckland has requested improvements on Route 112 from North Street to Mohawk Trail Regional High School, a distance of 0.5 mile, to better accommodate pedestrians. A sidewalk is desired, but because of issues related to winter maintenance, MassDOT is designing a shoulder widening project to accommodate both pedestrians and bicycles. There are continued concerns that a wide shoulder is not the best option for providing for pedestrian accommodation, and the FRCOG will continue discussions throughout project development to design a project that all support.

Charlemont Roadway Reconstruction and Village Traffic Calming Project

Pedestrian infrastructure improvements on Route 2 in Charlemont center are included as part of a 0.9 mile roadway reconstruction project that begins approximately 600 feet west of where Route 8A crosses the Deerfield River and ends just east of South Street. The project is currently being designed and scheduled to be constructed beginning in 2017. It includes roadway and sidewalk reconstruction work, and the construction of various traffic calming measures in the Charlemont village center. All existing sidewalks and curb-cut ramps will be reconstructed to achieve accessibility compliance.

Colrain Center Intersection Improvements

This project is to reconstruct the three-legged intersection of Main Road, Jacksonville Road and Greenfield Road in Colrain village center. The project is intended to improve sight distance and pedestrian accommodation. The project includes reconstructing the intersection and its approaches from 0.1 mile north and south, and 0.5 mile west to the town offices. It also includes creating an accessible network of sidewalks, ramps, and crosswalks to link popular village center locations. The project will include approx. 0.5 mile of new sidewalk, with landscaping and streetscape elements to promote pedestrian mobility in the village. Colrain Center was assessed as part of the 2012 Complete Streets Project.

Ervingside Streetscape Improvements

The Ervingside Streetscape Improvement Project was awarded funding from the National Scenic Byway Program to complete the design and construction of sidewalk and streetscape improvements along the Connecticut River Scenic Byway (Route 63) in Erving. The project is intended to improve pedestrian access and safety on a one mile section of Route 63 in Erving. The project area spans from the north side of the bridge over the Millers River on Bridge Street (at the Erving/Montague town border) to the Erving Senior center. The project area is just over one mile long, and includes the Erving section of Millers Falls and the

adjacent residential neighborhood known as Ervingside. The design is scheduled to start during 2015 and construction is scheduled for 2016.

Greenfield Cheapside Intersection Improvements

This intersection is poorly aligned, confusing to motorists, and has several safety issues. This project will realign the intersection and add needed turn lanes to improve traffic flow and safety. The project includes measures to improve pedestrian access. This intersection was evaluated as part of the 2012 Complete Streets Project. It is scheduled for construction during 2015.

Greenfield Route 2A, River Street and Shelburne Road Intersection Improvements

This intersection project incorporates components to create better pedestrian access. This intersection was examined as part of the 2012 Completed Streets Plan and pedestrian improvements were suggested. Many of the pedestrian improvements were incorporated into this project. It is scheduled for construction during 2015.

Greenfield Turners Falls Road

Turners Falls Road in Greenfield is a steep winding hill that leads from east Greenfield into the village of Turners Falls in Montague via the White Bridge. The route is frequently traveled by pedestrians and bicyclists, but it does not have a sidewalk or a lane/shoulder to accommodate bicycles. On the west side of Turners Falls Road, there is a steep incline with rock outcroppings. On the east side of the road, there is a steep drop down a large hill to the Connecticut River. On numerous occasions concerns over the frequent and regular use of this route (Turners Falls Road and Loomis Road) by pedestrians and the lack of infrastructure was expressed to the FRCOG.



Bicyclist on Turners Falls Road

Turners Falls Road links to 5th Street and Canal Street in Turners Falls. It is also a link to the Canalside Trail Bikepath. This route is an important gateway to Turners Falls and connects two large regional environmental justice areas. The route has a high volume of vehicular, pedestrian and bicycle traffic. The FRCOG examined this route as part of the 2014 Complete Streets Project and provided recommendations for better pedestrian and bicycle accessibility. Further study is planned for next year and the design and implementation of

safety improvements for bicyclists and pedestrians on Turners Falls Road is one of the Top 25 Transportation Recommendations for Franklin County included in this 2016 Regional Transportation Plan.

Greenfield Leyden Road

Leyden Road is a frequently used walking route that does not have sidewalks on the 1 mile section from Nash's Mill Road to Leyden Woods Road. Leyden Road is a main route from this densely populated housing complex into downtown Greenfield, and it intersects with Nash's Mill Road within a ½ mile of the Greenfield Swimming and Recreation Area and the terminus of the Riverside Greenway Bike Path. Additionally, there are densely developed residential neighborhoods, including an affordable housing development on Leyden Road and the surrounding area. This area is also an identified environmental justice area in Franklin County. Leyden Road is served by the Franklin Regional Transit Authority's (FRTA) Route 21 Greenfield Community Route bus. The lack of a sidewalk on this route has been the focus many comments received during public outreach. The City of Greenfield is exploring installing a sidewalk on Leyden Road because pedestrians are often walking along the section of Leyden Road between Leyden Woods (residential development) and Nash's Mill Road/Conway Street. The FRCOG assessed this route as part of the 2014 Complete Streets Project and design and implementation of safety improvements for bicyclists and pedestrians on Leyden Road is one of the Top 25 Transportation Recommendations for Franklin County included in this 2016 Regional Transportation Plan.

Northfield Streetscape and Safety Improvements Phase II

Phase II of the Northfield Main Street Improvement Project involves intersection and pedestrian safety improvements on Main Street (Routes 10/63) in the Town of Northfield. The work will include replacement of raised medians and relocation of flashing traffic signals; various crosswalk upgrades; new sidewalk construction; and other incidental work. The length of the project is approximately 2.65 miles, beginning at the intersection of Route 10 and 63 and extending to Moody Street. The project was approved by the MassDOT Project Review Committee, but the project has not yet been designed.

Orange North Main Street

This project will reconstruct the road and repair drainage and retaining walls along a ½ mile section of North Main Street in downtown Orange. As part of this project, ADA accessible sidewalks will be constructed along with traffic signing, landscaping, and streetscape improvements. The project begins on North Main Street at the School Street intersection and ends at the intersection of Lincoln Avenue, a distance of approximately 0.4 miles. Construction is scheduled for 2018. North Main Street from the intersection of North Main,

South Main, West Main and East Main Streets (Route 2A) to the Fisher Hill and Dexter Park Schools was assessed as part of the 2014 Complete Streets Project. The area assessed was approximately 1 mile long. The roadway and sidewalk are in poor condition. North Main Street area connects the commercial downtown area in Orange to the residential neighborhoods, and is generally walkable if the infrastructure is improved. Pedestrian improvements are important to this area.

Orange East Main Street

East Main Street (Route 2A) is a main travel route from downtown Orange to Athol. It is a commercially oriented business area with many of the businesses being automobile oriented in their design and access layout. However, East Main Street is also an important route for pedestrians and bicyclists. It is a key connection to essential services for the population of this area. It is within walking distance of many residential areas and is also part of the FRTA Greenfield/Orange bus route (Route 32). This area was examined as part of the 2014 Complete Streets Project, and the construction of sidewalks, highly visible crosswalks and Americans with Disabilities Act (ADA) compliant curb-ramps were recommended.

Orange East Water Street

Water Street in downtown Orange links South Main Street to East Main Street. This route travels near Memorial Park, Rodney Hunt Manufacturing, the Orange District Court and an FRTA transit stop. This route is an important walking link within the downtown area of Orange. This area was examined as part of the 2014 Complete Streets Project, and recommendations to better accommodate pedestrians and bicycles were outlined, such as constructing sidewalks, relocating obstructions in the sidewalks, and painting all crosswalks to be more visible.

Orange West River Street

West River Street in Orange is located south of the intersection of North, South, East and West Main Streets (Route 2A and Route 122) in downtown Orange. West River Street is on the south side of the Millers River. The post office is at the corner of South Main Street and West River Street. This area was examined as part of the 2014 Complete Streets Project and is an identified environmental justice area. It was recommended that the road be realigned and the travel lanes narrowed to allow room for bike lanes and wide sidewalks. Improvements at the intersection of West River and South Main Street were recommended to improve the crosswalk and install a curb extension to shorten the crossing distance for pedestrians.

South Deerfield Streetscape Improvements

South Deerfield village center is a pedestrian friendly area. A number of streetscape design elements have been considered conceptually. Most recently the 2013 Downtown Deerfield Complete Streets and Livability Plan outlined some potential improvements to make the area more pedestrian and bicycle friendly, such as completing the new pavement marking plan that better accommodates bikes and pedestrian (developed as part of the Livability Plan), designating Sugarloaf and Elm Streets as part of the Franklin County Bikeway, and installing landscaping barrels (designed as part of the Livability Plan).

Sunderland North Main Street

This project will consist of box-widening and resurfacing North Main Street from the Route 116 intersection to Claybrook Drive. The project will also include sidewalk reconstruction, new wheelchair ramps, drainage system replacement and new pavement markings and signage. This area was examined as part of the 2014 Complete Streets Project, and crosswalk and curb-cut improvements, improved pedestrian crossing signals, and bicycle lane and/or Sharrows were recommended.

Ongoing Activities with Both Bicycle and Pedestrian Components

Safe Routes to School Program

The Massachusetts Safe Routes to School (SRTS) Program is intended to encourage walking and bicycling to school by providing technical assistance and support to schools. It also provides an opportunity for schools that are enrolled in the program to receive assistance in assessing and improving infrastructure within one mile of their school. The program is a grassroots initiative where individual schools design their own activities. In 2011, the FRCOG reached out to schools and encouraged enrollment in the SRTS program. At the time that the project was undertaken, there was one Franklin County school enrolled in the program. There are now currently eight schools in the region that are now enrolled in the program including:

- Bernardston Elementary School, Bernardston
- Colrain Central School, Colrain
- Erving Elementary School, Erving
- Discover School at Four Corners, Greenfield
- Federal Street School, Greenfield
- Newton Street School, Greenfield
- Greenfield Middle School, Greenfield
- Sunderland Elementary School, Sunderland

The FRCOG continues to encourage schools to enroll in the program and has also provided support to schools that have enrolled by assisting with walking assessments.

Complete Streets

In 2012 and 2014, Regional Complete Streets Projects were completed. These projects selected locations in Franklin County and conducted comprehensive assessments and design recommendations for these sites. In the *Franklin County Complete Streets Project* (September 2012) five locations were analyzed and specific recommendations were made. The locations assessed were:

- Colrain Center: Main Road, Jacksonville Road and Greenfield Road
- Greenfield: Deerfield Street (Route 5/10) and Cheapside Street
- Greenfield: Main Street (Route 2A), River Street and Shelburne Road
- Greenfield: Bank Row, Olive Street and Hope Street near the John W. Olver Transit Center
- Whately and South Deerfield: Routes 5/10/116 (Greenfield Road) from Sunderland Road to Conway Road

In the *Franklin County Complete Streets Project Part 2* (September 2014), an additional ten locations were assessed. The locations were:

- Conway: Deerfield Street, Whately Road and Main Street
- Erving: Route 63 in Ervingside
- Greenfield: Nash's Mill Road and Leyden Road
- Greenfield: Cherry Rum Plaza
- Greenfield: Turners Falls Road
- Orange: West River Street
- Orange: East Main Street (Route 2A)
- Orange: North Main Street
- Orange: East Water Street
- Sunderland Center: Intersection of Route 47 and 116.



Crosswalk in Sunderland Center.

Mass in Motion

Mass in Motion (MiM) is a statewide program that promotes opportunities for healthy eating and active living in the places people live, learn, work and play. MiM works with

communities, schools, childcare centers, and businesses to create changes that make it easy for people to eat better, move more, make better choices to feel healthy and live well. Since 2012, the FRCOG has coordinated the MiM initiative for Franklin County. In Franklin County, the program is focused on promoting Complete Streets policies, encouraging joint use agreements for locations that can serve multiple functions and increase opportunities for healthy activities, and supporting efforts to increase the use of local foods in institutional food services.

Bike Week Event and Park(ING) Day

The FRCOG has worked to encourage and promote the use of bikes for transportation by hosting events during Baystate Bike Week and on Park(ING) Day. In 2013 and 2014, the FRCOG hosted a breakfast at the John W. Olver Transit Center in Greenfield for bike commuters during Baystate Bike Week. The FRCOG has also collaborated with the City of Greenfield and the Greenfield Business Association to participate in Park(ING) Day, an annual worldwide event where a metered parking space is transformed into a temporary public park, in downtown Greenfield. The FRCOG has used both of those events to provide information and complete outreach about healthy transportation options and current transportation planning projects.

Public Input Received During the Regional Transportation Planning Process

Public Outreach Meetings

During the Regional Transportation Plan public outreach meetings the following bicycle and pedestrian related comments and recommendations were received:

- Create vegetation management plans to address the growth of invasive plants such as Poison Ivy and Knotweed that encroach into sidewalks and areas to walk along roadways. This was noted as an issue on North Leverett Road in Wendell and Leverett.
- Install shared roadway bike lanes in Sunderland to connect communities and cross county lines.
- Reconfigure the parking on Main Street in Greenfield to be more bicycle-friendly.
- Improve the bicycle and pedestrian connections between Turners Falls and Greenfield.
- Create a bike path connection between Unity Park in Turners Falls and downtown Greenfield.
- Create more bicycle-friendly roadways.
- Clear snow on sidewalks and curb cuts in the winter. This is an ADA accessibility issue.

Regional Transportation Survey

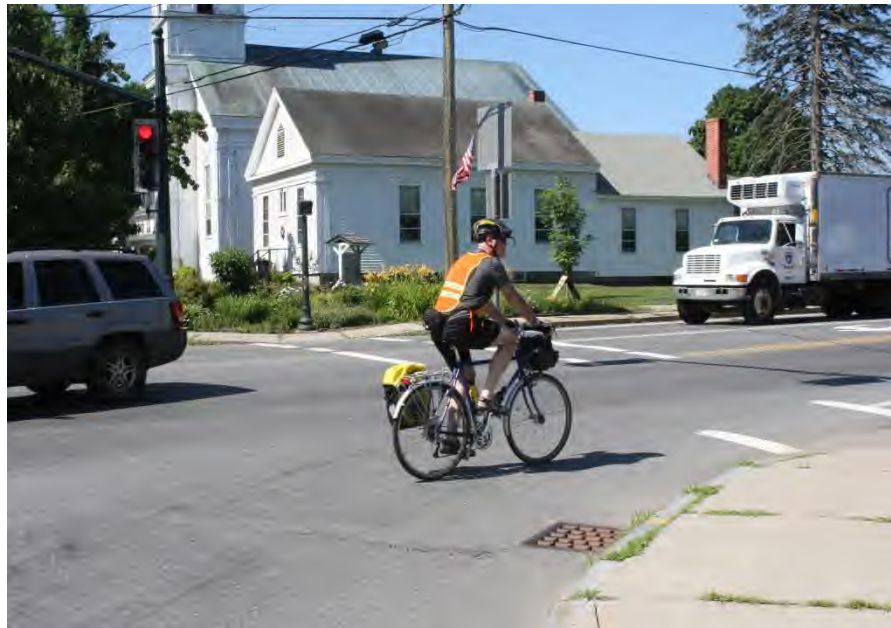
A survey was conducted as part of the development of this Regional Transportation Plan. The following are general bicycle and pedestrians related comments that were gathered from the survey responses:

- A majority of the participants expressed that improving existing sidewalks and adding new sidewalks were “medium level priorities”.
- An equal number of participants felt that adding more bikepaths was a “high level priority” as the number who expressed that it was a “medium priority”.
- For 4% of the survey respondents, walking is their primary mode of transportation.
- The lack of sidewalks on Leyden Road was specifically noted.
- Difficulty biking and walking between Greenfield and Turners Falls is a problem.
- Franklin County is a great place to bike and more resources should be devoted to this mode of transportation.

Recommendations for Bicycle and Pedestrian Facilities

- Pursue funding to install Franklin County Bikeway Logo signs, on the remaining segments of the Franklin County Bikeway as outlined in the *Franklin County Bikeway Plan Update (2009)*.
- Update and distribute Franklin County Bikeway Maps to help promote bicycling in Franklin County.
- Further identify and evaluate the viability of potential extensions of the Franklin County Bikeway and potential connections to other bicycle trails and paths in the greater regional area.
- Conduct additional Complete Streets assessments for upcoming Transportation Improvement Projects and promote the concept of Complete Streets.
- Support efforts to implement the design work for the Millers River Greenway in Orange and Athol.
- Pursue funding to complete preliminary design for the Erving-Wendell Bike Path.
- Improve roads for bicycle and pedestrian accommodation.
- Consider the issue of snow removal from sidewalks and ramps.
- Include pedestrian and bicycle infrastructure improvements when appropriate into the scope of road construction projects.
- Implement specific improvements identified in the *Franklin Regional Pedestrian Plan (2010)*, *Franklin County Complete Streets Project (2012)* and *Franklin County Completes Streets Project Part 2 (2014)*.
- Continue to support and assist Franklin County schools in the Massachusetts Safe Routes to School Program.

- Work to improve the pedestrian network by filling in the gaps where sidewalks and crosswalks are needed and prioritize ADA compliance projects.
- Develop and implement a campaign to educate the public about safe pedestrian practices and promote walking as a transportation option.
- Improve the 5th Street gateway entrance to Turners Falls from Greenfield to better accommodate pedestrian flow and vehicle safety.
- Rehabilitate Avenue A in Turners Falls with pedestrian-focused streetscaping that is ADA accessible and to accommodate additional bicycle parking.



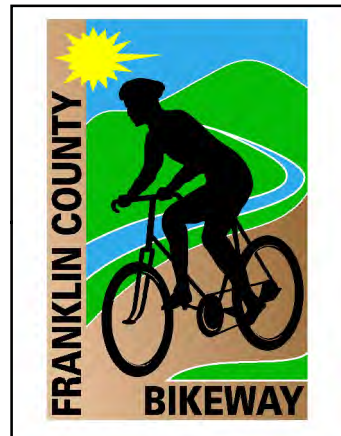
Bicyclist riding on Route 116 in Sunderland Center.

Franklin County Massachusetts

Franklin County Bikeway Network

 Bikeway Route

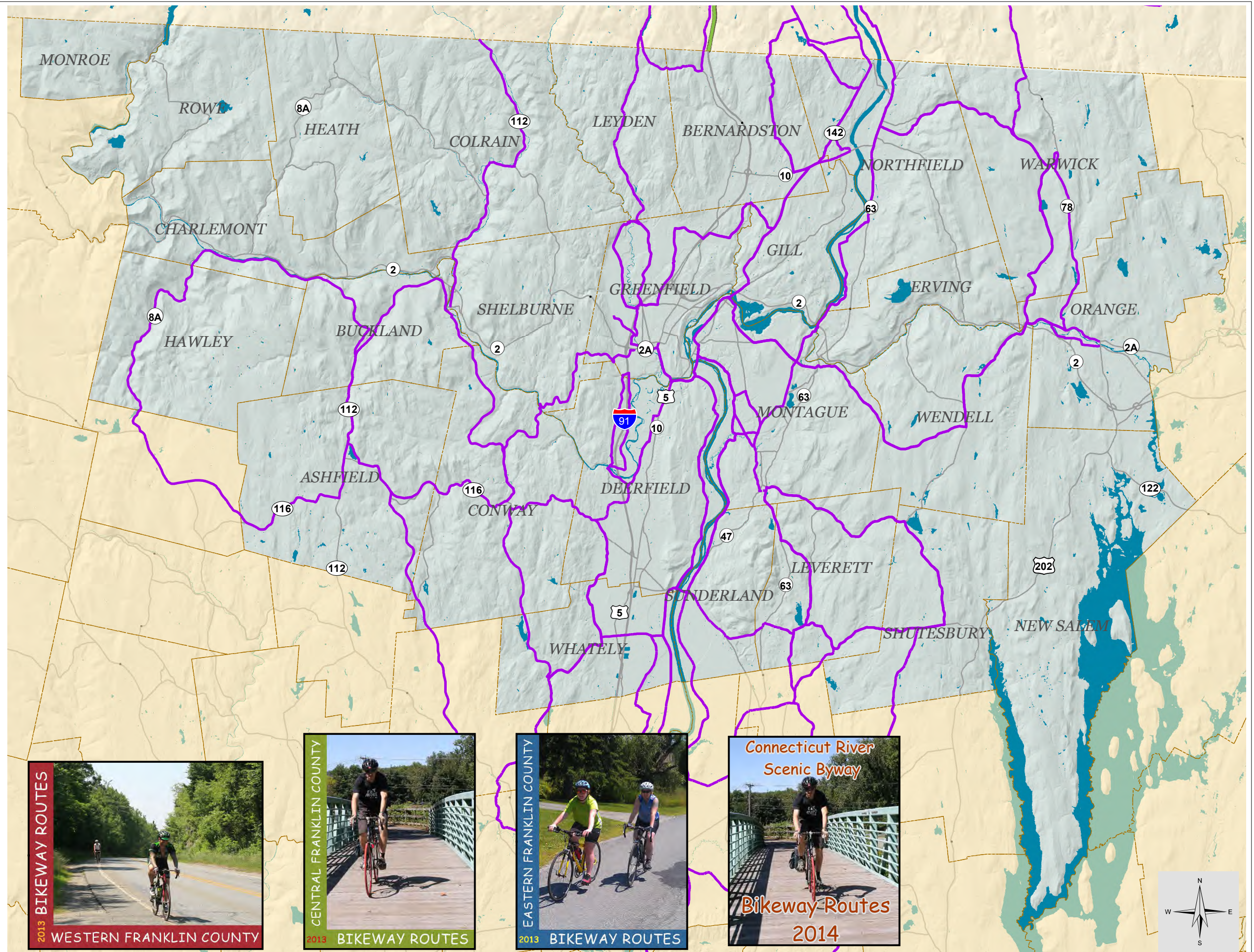
**This map consists of a series of shared roadway routes and off-road routes*



This Franklin County bikeway sign is posted throughout the county along designated bikeway routes for the purpose of wayfinding.



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



11

Scenic Byways & Regional Tourism



2016 Regional Transportation Plan

11 Scenic Byways and Regional Tourism

The five scenic byways in Franklin County play an important role in regional tourism. The five byways are the Connecticut River Scenic Byway, the Route 112 Scenic Byway, the Route 116 Scenic Byway, the Route 122 Scenic Byway and the Mohawk Trail Scenic Byway. Four of the byways are state designated and one of the byways, the Connecticut River Byway (Route 63 and 47), is nationally designated.

Both state and nationally designated scenic byways are part of the National Scenic Byways Program, a grass-roots collaborative effort established to recognize, preserve and enhance selected roads throughout the United States. The program was originally established as part of the Intermodal Surface Transportation Efficiency Act of 1991. It recognizes certain roads as scenic byways based on archeological, cultural, historic, natural, recreational and/or scenic qualities. In Massachusetts, eligible roads are officially designated as scenic byways through an act of the Legislature.

The designation is primarily honorary and intended to recognize the special nature of these roads, using it to promote and protect the area as determined by local interests. Until 2011, funding was available through an annual discretionary grant program for projects that enhanced, protected and promoted the intrinsic qualities of the byway. In Franklin County, many projects have been funded through the scenic byway discretionary program ranging from the creation of corridor management plans, completion of land protection, the development of promotional materials, and the planning and construction of streetscape improvements. These funded projects have enhanced existing tourism activities, and laid the groundwork for continued tourism initiatives along the byways.

Scenic Byways

The following section describes the five scenic byways in Franklin County and describes recently completed or active projects on each byway.

Connecticut River Scenic Byway

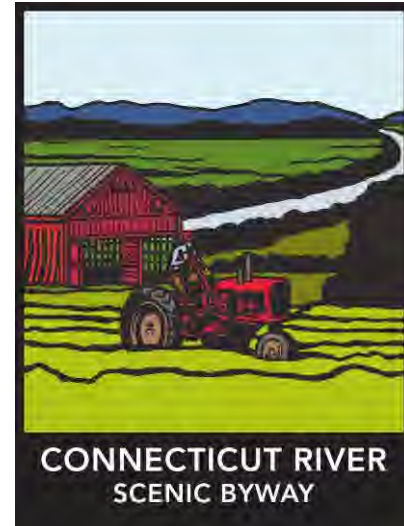
The Connecticut River Scenic Byway travels through the heart of the Connecticut River Valley and neighboring farmland, floodplains, and historic villages from northern New Hampshire and Vermont through Franklin County into Hampshire County in Massachusetts. Along the byway corridor, there are many sites and resources that highlight the rich history of the area dating back to the 1600s and the early inhabitation by Native Americans and Colonial settlers. The Connecticut River Valley's history and farming heritage is still reflected in the

many surviving architectural resources that can be seen along the byway. The Franklin County section of the byway, consisting of Route 63 in the towns of Northfield, Erving, and Montague and Route 47 in Montague and Sunderland, was designated as a state scenic byway by the Massachusetts Legislature in 2000, and the Hampshire County section of the byway (Route 47 in Hadley and South Hadley) was also designated in 2003. In 2009, the Connecticut River Scenic Byway was then designated as a National Scenic Byway. This remains the only nationally designated scenic byway in the Commonwealth.

Recently Completed Projects

Connecticut River Scenic Byway Tri-state Bike Map

In a project that included the Pioneer Valley Planning Commission (PVPC), the Windham Regional Commission (Vermont), and the Southwest Regional Planning Commission (New Hampshire), the FRCOG coordinated the development and printing of an on-line map of the bicycle facilities connecting the three states. There are links on the frcog.org website to the pdf of the print map and to on-line versions of the maps that can be viewed in Google Earth.



The logo and way-finding sign for the Connecticut River Scenic Byway.

The project also included the installation of way-finding signs to aid in navigation along a recommended bicycle route that connects Greenfield, Brattleboro VT, and Keene NH. Additionally, the project included the purchase of bicycle parking racks for installation at key visitor oriented locations in the Hampshire County section of the Byway. The intention of the project was to enhance the bicycling resources in the tri-state area of the Connecticut River Scenic Byway and to build on the growing bicycle touring section of the regional economy.

Projects Underway

Connecticut River Scenic Byway Corridor Management Plan Update

A Corridor Management Plan was originally completed for the Byway in 1998, and provided recommendations for promoting economic opportunities while protecting the natural, cultural, and historic resources of the Byway. With funding through the National Scenic Byway Program, work is currently underway to update the Corridor Management Plan. The updated plan will be completed in March 2016.

*Erving*side Streetscape Improvements

The Connecticut River Scenic Byway passes through the Town of Erving along Route 63. A one-mile section of this route has been awarded funding to complete the design and construction of sidewalk and streetscape improvements. The project is intended to improve pedestrian access and safety. The project area includes the Erving section of Millers Falls and the adjacent residential neighborhood known as Erving

side. Comprehensive plans for sidewalk and streetscape elements will be developed as part of the project. The improvements will link residential neighborhoods, the Erving Library, Veterans Memorial Park, the Erving Elementary School, the Senior Center and the business that are located along Route 63 in Erving.

Mohawk Trail Scenic Byway

The Mohawk Trail Scenic Byway is one of the earliest scenic byways in New England, receiving its designation in 1953. The byway travels on Route 2 and 2A through Berkshire, Franklin and Worcester counties. In Franklin County, the byway travels through the towns of Charlemont, Buckland, Shelburne, Greenfield, Gill, Erving and Orange.

The western section of the byway (Williamstown to Greenfield) follows the east-west route first used by Native Americans between the Hudson River and the Connecticut River Valleys. The route continued to be used for travel by colonists and eventually was upgraded to support subsequent forms of transportation. The western section of the byway was the first state road to be designated and constructed as a scenic tourist route, opening amid much fanfare in 1914.

The eastern section (Greenfield to Athol) also first developed as a foot path of the Native Americans. The Europeans from the Connecticut River Valley later used this trail to settle the northern interior of Massachusetts and for commerce by horse and cart. Later, entrepreneurs from the cities in eastern New England built the Fifth Massachusetts Turnpike along much of the original pathway. During this development, the road was changed and improved to accommodate new modes of transportation and infrastructure.

Recently Completed Projects

Mohawk Trail Historic Preservation Project

The FRCOG is working with the Berkshire Regional Planning Commission (BRPC) to complete the Mohawk Trail Historic Preservation Project. The goal of the project is to preserve historic properties located on the Mohawk Trail Scenic Byway. The project has two components: 1) to prepare Massachusetts Historic Commission Survey Forms and/or National Register of Historic Places nomination forms for several properties along the Mohawk Trail Scenic Byway,

and 2) to conduct a study to determine the feasibility of developing and administering a revolving loan fund to assist landowners in preserving historically significant properties on the Mohawk Trail. The FRCOG worked with the local Historical Commissions to identify properties that are of historic significance along the Mohawk Trail corridor. The national Register of Historic Places nominations have been prepared for the Riverside District in Gill, the Shelburne Free Library and the Little Red Schoolhouse in East Charlemont. The feasibility study is underway.

Route 112 Scenic Byway

The Route 112 Scenic Byway was officially designated as a scenic byway by the Massachusetts Legislature in 2004. The Route 112 Scenic Byway travels through the Towns of Colrain, Buckland, Shelburne, and Ashfield in Franklin County and the Towns of Goshen, Cummington, Worthington, and Huntington in Hampshire County. It travels through historic town centers, working farms, scenic rivers, and majestic forests with beautiful mountains providing a backdrop. The corridor is rich in natural, cultural, and historic resources. In addition, the byway intersects with the Mohawk Trail Scenic Byway to the north and the Jacob's Ladder Trail Scenic Byway to the south. A Corridor Management Plan for the Route 112 Scenic Byway was completed in 2009.



**Route 112 bridge in Colrain Center
over the North River.**

Route 116 Scenic Byway

The Route 116 Scenic Byway is the most recently designated Scenic Byway in Franklin County. In 2008, the Massachusetts Legislature designated Route 116 in the towns of Deerfield, Conway, Ashfield, Plainfield, Savoy, and Adams as a scenic byway. The byway travels 39 miles from the Deerfield/Sunderland town line (at the Connecticut River) to downtown Adams (in Berkshire County) at the intersection of Route 116 and Route 8. In Franklin County, the Byway travels through the towns of Deerfield, Conway, and Ashfield. In Deerfield, the byway route follows the historic route of Route 116 (the current Route 116 bypass was constructed in the 1960s) onto Sugarloaf Street through historic South Deerfield center onto Elm Street and north onto Routes 5/10/116. The byway rejoins Route 116 to the west of South Deerfield center and travels west to historic Conway center, which travels

past the Burkeville Covered Bridge which is on the National Register of Historic Places and has recently been restored. Route 116 continues west through historic Ashfield center, where it intersects with Route 112, which is also a designated scenic byway.

Recently Completed Projects

Corridor Management Plan

A Corridor Management Plan for the Route 116 Scenic Byway was completed in 2013. The plan was developed in coordination with BRPC and PVPC. The plan details the many scenic, cultural, historic, natural, and recreational resources along the byway. It provides recommendations for protecting and enhancing these resources.



Farmland along Route 116 in Franklin County.

Route 122 Scenic Byway

In 2005, the Massachusetts Legislature designated Route 122 in the Towns of Paxton, Rutland, Oakham, Barre, Petersham, Orange, and New Salem as a scenic byway. The Route 122 Scenic Byway travels from the Paxton/Worcester town line to downtown Orange. Paxton, Rutland, Oakham, Barre, and Petersham are in Worcester County, and New Salem and Orange are in Franklin County. The Franklin County section of the byway travels along the northern end of the Quabbin Reservoir. In Orange, the byway terminates at the intersection of Route 122 and Route 2A, part of the Mohawk Trail Scenic Byway.

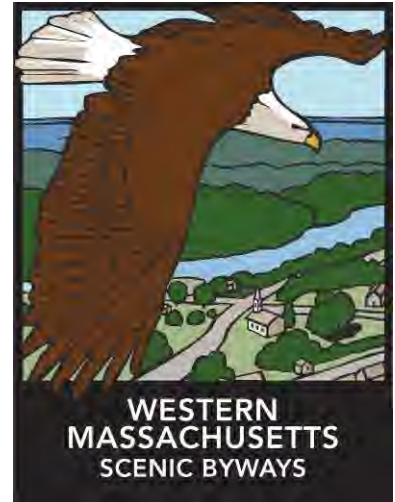
Recently Completed Projects

Corridor Management Plan

The FRCOG completed a corridor management plan for the Franklin County section of the Route 122 Scenic Byway in New Salem and Orange. The eastern end of the project area is at the town border of New Salem and Petersham. The corridor management plan was completed in June 2011. The plan includes: inventories of the historic, cultural, and natural resources; a scenic landscape inventory and assessment; and the identification of heritage and recreational tourism-related attractions and support services. The plan also includes recommendations to help guide future byway-related activities and projects.

Western Massachusetts Byways Promotional Campaign

The Western Massachusetts Scenic Byway Marketing Project is a collaborative effort of the Berkshire Regional Planning Commission (BRPC), the Central Massachusetts Regional Planning Commission (CMRPC), the FRCOG, the Pioneer Valley Planning Commission (PVPC), and the Massachusetts Department of Transportation (MassDOT) to create unified promotional materials for the seven scenic byways in western Massachusetts. The project has included the development of individual byway logos, advertising materials, a website, and way-finding signs. Each of the byways has its own unique character and story, and the project developed materials to highlight these qualities while also presenting the information as part of a network. The byway's website, <http://www.bywayswestmass.com>, was launched in June 2013. The way-finding sign installation will be completed by June 2015.



Western Massachusetts Scenic Byways Logo.

Scenic Byway Land Protection Project

The FRCOG is working cooperatively with the Franklin Land Trust, MassDOT, Massachusetts Department of Conservation and Recreation (DCR), and the Massachusetts Department of Agriculture (DAR) to permanently protect land along the Mohawk Trail, Connecticut River and Route 112 Scenic Byways. To date, approximately 1,000 acres of landscapes critical to the Mohawk Trail, Connecticut River and Route 112 Scenic Byways have been permanently protected.

Transportation Related Regional Tourism

Regional tourism is an important consideration for transportation and travel in Franklin County. The region is rich in scenic, natural, cultural, and historic features that are appealing to travelers. Tourism also plays an increasingly important role in the region's economy. The Massachusetts Office of Travel and Tourism (MOTT) estimated that in 2013 domestic travelers in Franklin County spent over \$58 million (source: *MOTT's Economic Impact of Travel on Massachusetts Counties, CY2013*). This was a 25% increase from traveler expenditures in 2009. Consequently, visitors to the area are a significant contributor to the local economy and essential to the economic viability of the region. Additionally, recent economic data quantifies the significance of the creative economy of the region. These resources are important to consider as part of any transportation planning activities.

Scenic Byway Related Tourism

The scenic, natural, recreational, historic, and cultural resources along the byways appeal to a wide range of interests. As previously noted, byway travelers experience a diverse landscape that includes the classic mill towns of New England, rolling hills, rural farmland, historic architecture, mountains, river valleys, and spectacular vistas. The byways cater to a variety of outdoor activities ranging from hiking, picnicking, kayaking, canoeing, fishing, to skiing. Each byway has a unique history that is representative of different periods of time. In addition, there are many artisans who currently live and work in the area and provide opportunities to experience their crafts. The byways of Franklin County are a region-wide network for travelers to explore these diverse and rich resources.

It is important that tourist information and services be available to travelers. Information including publications, brochures, maps, websites, and telephone numbers are crucial to encouraging tourism along the scenic byways. The corridor management plans for the scenic byways contain an inventory of the cultural, historical, natural, scenic, recreational, and commercial resources within each byway area. Through the Scenic Byway Marketing Project enhanced informational resources and the byway website were developed to assist visitors to the area and byway travelers.

Bicycle Tourism

Bicycle tourism has increasingly been recognized as an important component of the Franklin County tourism industry. The region has many low volume, scenic roads that provide excellent bicycle touring routes. The significance of bicycle tourism and the increasing number of people who are traveling to Franklin County to bicycle was emphasized during the public input sessions held during the development of the *2009 Franklin County Bikeway Plan Update*. This updated plan included the following two goals related to bicycle tourism: 1) encourage bicycling as a regional tourism activity and complete measures which will identify Franklin County as a great place to come and bicycle, and 2) identify bicycle routes that could encourage tourism throughout Franklin County. The Plan further recommended the creation of promotional materials for the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) to promote bicycling in the region. It also recommended the creation of advertisements to be used in bicycling magazines and websites promoting bicycling in Franklin County. The goal of promoting bicycle tourism was also included in the *2008 Massachusetts Bicycle Transportation Plan* to “develop bicycle tourist publications through the Massachusetts Office of Travel and Tourism (MOTT).”

The FRCOG has already created four bicycling maps for the region. The maps highlight the Franklin County Bikeway routes (both off-road bike paths and shared roadway sections),

elevation change, water stops, the services along the way, and other information that may be helpful to cyclists. Travel to Franklin County via the Amtrak rail service does not currently allow passengers to carry bicycles onto the train as luggage. It is important to the regional tourism economy that bikes and skis are allowed on this Amtrak passenger service.

Promotion of Regional Tourism

The regional tourism and hospitality industry are important considerations as the future of the regional transportation system is planned. Currently, local business representatives and economic development practitioners are focusing efforts on particular niches of the tourism industry, such as agri-tourism, eco-tourism, heritage tourism, and cultural tourism related to artists and craftspeople. Farm stands, maple sugar houses serving pancakes, and other forms of interactive experiences are growing in the agricultural industry of Franklin County. Eco-tourism activities include outdoor recreation such as rafting and skiing as well as education-related opportunities, like guided nature hikes. Future transportation planning should reinforce and build on this momentum in the region to promote all of the region's many tourism opportunities.

Recommendations for Scenic Byways

- Continue work to permanently protect scenic and agricultural lands along the scenic byways by purchasing conservation restrictions and/or agricultural preservation restrictions from willing landowners.
- Continue work to develop initiatives to market the byways of Western Massachusetts as travel destinations.
- Implement the recommendations of the corridor management plans for each of the scenic byways.

Recommendations for Tourism

- Develop marketing and informational resources to promote Franklin County as a travel destination.
- Provide information and resources to encourage tourism opportunities related to bicycling throughout the county.
- Create promotional materials for the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) to use in their promotional campaigns.

- Encourage the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) organizations to include information on bicycling in Franklin County in their tourism materials.
- Create advertisements to be used in bicycling magazines and websites promoting bicycling in Franklin County.
- Advocate for bikes and skis to be allowed on Amtrak regional rail service.

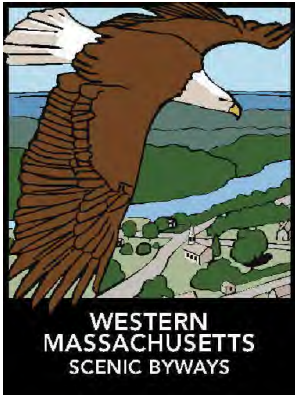


Rafters on the Deerfield River in Franklin County.

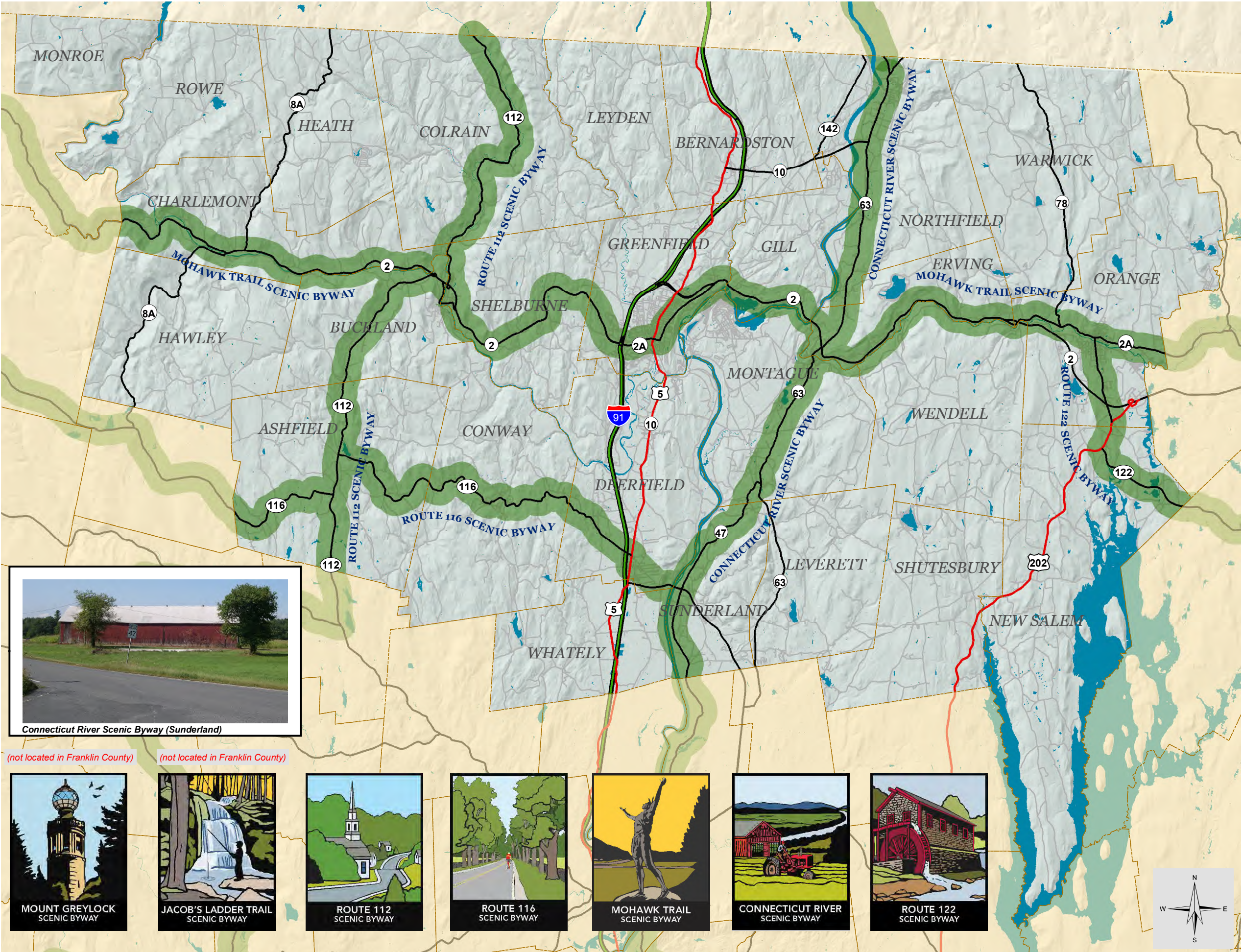
Franklin County Massachusetts

Federal & State Designated Scenic Byways

Scenic Byway



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



12

Sustainability & Climate Change



2016 Regional Transportation Plan

12 Sustainability and Climate Change

The promotion of energy efficient and sustainable transportation systems is an issue that has increasingly become a priority both regionally and nationally. Higher fuel costs and concerns related to climate change have contributed to a strengthening focus on reducing the personal use of automobiles and also on using new and developing technologies that create more fuel efficient and cleaner burning vehicles.

Climate change is a result of global warming, which is largely caused by human activities, specifically the production of greenhouse gases (GHG). Greenhouse gas emissions are caused by everyday activities, such as the generation of electricity and the operation of motor vehicles. While electricity was the largest contributor (31%) of GHG emissions in the United States in 2013, the transportation sector comes in at a close second at 27 percent. It is projected that transportation will continue to account for more than one-third of Massachusetts' total GHG emissions in 2020. The consequences of climate change are expected to include increased numbers of very hot days, higher average rainfall and temperatures, and more severe storms. These effects will also, in turn, impact the performance of our infrastructure. As a result, these variables must be examined when planning for the future of the transportation system in Franklin County, because the decisions that are made today, "particularly those related to the redesign and retrofitting of existing transportation infrastructure or the location and design of new infrastructure, will affect how well the system adapts to climate change far into the future."¹

Sustainable transportation and the reduction of GHG's is a priority for the Franklin County Transportation Planning Organization (FCTPO). This chapter will discuss ongoing and recommended initiatives that encourage sustainable transportation and, therefore, the mitigation of GHGs in the region. In addition, this chapter will examine ways in which the transportation infrastructure system can be adapted to the changing conditions that climate change will bring to the region.

Guiding Policies, Programs and Plans

The Commonwealth of Massachusetts, FRCOG, and other regional organizations have demonstrated their commitment to reducing GHG emissions. Within the past few years, the following policies and plans have been enacted to help reduce the level of GHGs.

¹ Transportation Research Board (TRB). Potential Impacts of Climate Change on U.S. Transportation. TRB Special Report 290. 2008.

Metropolitan Planning Organizations and the Global Warming Solutions Act

The Commonwealth's Global Warming Solutions Act (GWSA) of 2008 requires statewide reductions in greenhouse gas (GHG) emissions of 25 percent below 1990 levels by the year 2020, and 80 percent below 1990 levels by 2050. As part of the GWSA, the Executive Office of Energy and Environmental Affairs developed the Massachusetts Clean Energy and Climate Plan (CECP), which outlines programs to attain the 25 percent reduction by 2020 – including a 7.6 percent reduction that would be attributed to the transportation sector.

The Commonwealth's thirteen metropolitan planning organizations (MPOs) are integrally involved in helping to achieve greenhouse gas reductions mandated under the GWSA. The MPOs work closely with the Massachusetts Department of Transportation (MassDOT) and other involved agencies to develop common transportation goals, policies, and projects that would help to reduce GHG emission levels statewide. For example, one of the programs in the CECP is MassDOT's sustainability initiative known as GreenDOT. GreenDOT policy goals were developed in accordance with the GWSA, and are as follows:

- Reduce greenhouse gas (GHG) emissions
- Promote the healthy transportation modes of walking, bicycling, and public transit
- Support smart growth development

The FCTPO shares in these goals and is working to meet the specific requirements of the GWSA regulation – *Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation (310 CMR 60.05)*. The purpose of this regulation is to assist the Commonwealth in achieving their adopted GHG emission reduction goals by:

- Requiring MassDOT to demonstrate that its GHG reduction commitments and targets are being achieved
- Requiring each MPO to evaluate and track the GHG emissions and impacts of its Regional Transportation Plan and Transportation Improvement Program
- Requiring each MPO, in consultation with MassDOT, to develop and utilize procedures to prioritize and select projects in its RTP and TIP based on factors that include GHG emissions and impacts

Meeting the requirements of this regulation will be achieved through the transportation goals and policies contained in the 2016 Regional Transportation Plans, the major projects planned in the RTPs, and the mix of new transportation projects that are programmed and implemented through the Transportation Improvement Program. The GHG tracking and evaluation processes enable the MPOs to identify the anticipated GHG impacts of the

planned and programmed projects, and also to use GHG impacts as a criterion in prioritizing transportation projects. This approach by the MPO is consistent with the greenhouse gas reduction policies of promoting healthy transportation modes through prioritizing and programming an appropriate balance of roadway, transit, bicycle and pedestrian investments; as well as supporting smart growth development patterns through the creation of a balanced multi-modal transportation system. All of the MPOs and MassDOT are working toward reducing greenhouse gases with plans, actions, and strategies that include (but are not limited to):

- Reducing emissions from construction and operations
- Using more fuel-efficient fleets
- Implementing and expanding travel demand management programs
- Encouraging eco-driving
- Providing mitigation for development projects
- Improving pedestrian, bicycle, and public transit infrastructure and operations (healthy transportation)
- Investing in higher density, mixed use, and transit-oriented developments (smart growth)

Regional GHG Tracking and Evaluation in RTPs

MassDOT coordinated with MPOs and regional planning agency (RPA) staffs on the implementation of GHG tracking and evaluation in development of each MPO's 2012 RTPs, which were adopted in September 2011. This collaboration has continued for the MPO's 2016 RTPs and 2016-19 TIPs. Working together, MassDOT and the MPOs have attained the following milestones:

- Modeling and long-range statewide projections for GHG emissions resulting from the transportation sector for use before final RTP endorsement. Using the Boston MPO's regional travel demand model and the statewide travel demand model for the remainder of the state, GHG emissions will be projected for 2020 no-build and build conditions, and for 2040 no-build and build conditions. The results of this modeling will be available before the endorsement of this RTP and the MPO staff will present on the results to the MPO membership before a vote on endorsement.
- All of the MPOs will include GHG emission reduction projections in their RTPs, along with a discussion of climate change and a statement of MPO support for reducing GHG emissions as a regional goal.

MassDOT, using its statewide travel demand model, will provide the FCTPO with statewide estimates of CO₂ emissions resulting from the collective list of all recommended projects in

all the Massachusetts RTPs combined (and supplemented by CO₂ emission reduction results for smaller, “off-model” projects supplied by the MPOs). Emissions will be estimated using the new (2014) MOVES model, and also incorporate the latest planning assumptions including updated socio-economic projections for the Commonwealth.

The project mix from this RTP (and all other RTPs) – modeled for both 2020 and 2040 using an Action (Build) vs. Baseline (No-Build) analysis to determine the CO₂ emissions attributed to all MPO’s mix of projects and smart-growth land use assumptions – is expected to show a neutral shift toward meeting the statewide greenhouse gas emissions reduction goal of 25 percent below 1990 levels by the year 2020, and 80 percent below 1990 levels by 2050. The reason for the anticipated neutral shift is that early indicators have shown that major infrastructure projects, both individually and collectively, would not trigger a significant change in GHG emission levels.

Working closely with MassDOT, the FCTPO continues to make efforts toward progress through planning activities to meet the GHG reductions targets and complying with the requirements of the GWSA. As part of this activity, the FCTPO will provide further public information on the topic and will continue to advocate for steps needed to accomplish the FCTPO’s and Commonwealth’s goals for greenhouse gas reductions.

The FCTPO certifies that it has made efforts to minimize the GHG emissions and impacts from the recommended projects (see certification at the end of this chapter. Potential TIP projects are subjected to an evaluation process using Transportation Evaluation Criteria (TEC). The TEC scores proposed projects in six different topic areas: condition, mobility, safety, community effects, land use & economic development, and environmental effects. The last criterion, environmental effects, specifically examines a project’s potential impact on air quality and climate. In addition to minimizing the GHG impacts from proposed projects, the FRCOG staff has sought public input on how to further reduce GHGs in the region. This topic received the most attention during the public meetings for the development of this RTP.

HUD-DOT-EPA Interagency Partnership for Sustainable Communities

In 2010, the U.S. Department of Housing and Urban Development (HUD) announced the Sustainable Communities Planning Grant Program. In the 2010 Budget, Congress provided a total of \$150 million to HUD for the Sustainable Communities Initiative to improve regional planning efforts that integrate housing and transportation decisions and increase the capacity to improve land use and zoning. In the Fall of 2010, a consortium, with FRCOG as lead partner, received a \$425,000 grant under this program for Franklin County. Through

this grant, the FRCOG created *Sustainable Franklin County: a Regional Plan for Sustainable Development*. The goals and recommendations in the plan were identified through an extensive public outreach process and focus on sustainable development within the context of a rural region. It not only examines issues associated with transportation, but also comprehensively looks at the effects of land use, housing, economic development, natural and cultural resources, and land use and infrastructure on sustainability.

Green Communities

In 2008, Massachusetts created the Green Communities Program which uses funding from auctions of carbon emissions permits under the Regional Greenhouse Gas Initiative to reward communities that achieve Green Communities designation by meeting five clean energy benchmarks:

1. Adopting local zoning bylaws or ordinances that allow “as-of-right siting” for renewable and/or alternative energy R & D facilities, manufacturing facilities or generation units;
2. Adopting an expedited permitting process related to the as-of-right facilities;
3. Establishing a municipal energy use baseline and a program to reduce use by 20 percent within five years;
4. Purchasing only fuel-efficient vehicles for municipal use; and
5. Requiring all new residential construction over 3,000 square feet and all new commercial and industrial real estate construction to reduce lifecycle energy costs (i.e., adoption of an energy-saving building “stretch code”).

Currently, 16 towns in Franklin County are officially designated as Green Communities and are eligible to receive funding grants.

Massachusetts Clean Cities

The Clean Cities program is a national U.S. Department of Energy program that seeks to reduce petroleum consumption in the transportation network. The Massachusetts Clean Cities Coalition offers training, assistance, and program support necessary to promote alternative transportation throughout the Commonwealth. It also administers the

Massachusetts Electric Vehicle Initiative (MEVI) which aims to increase the battery, fuel cell, and plug-in hybrid electric vehicles. Related to this, there are several electric vehicle



**Electric car charging in a downtown
Greenfield municipal parking lot.**

charging stations in the region. Three are located in Greenfield, including one high power station that can charge cars in 15-30 minutes. There are also multiple charging stations located just outside of Franklin County in Amherst and Northampton.

Alternative Transportation Plan

In 2009, the FRCOG created the *Alternative Transportation Plan* that examined ways to encourage alternative forms of transportation other than the singly-occupied vehicle. Some of the Plan's recommendations are summarized here:

- Continue implementation of the 2009 *Franklin County Bikeway Plan Update*,
- Continue implementation of the 2008 *Franklin County Park and Ride Study*;
- Support passenger rail in the region;
- Promote ridesharing efforts;
- Improve bus transit to attract residents wishing to park and ride, and increase the level of service for lower-income people and elderly.

Many of the recommendations in the *Alternative Transportation Plan* are part of ongoing efforts by the FRCOG, FRTA, and other organizations in the region and are described in more detail in the next section.

Current Planning Activities

The FRCOG recognizes the rural nature of the Franklin County region and acknowledges that traveling by automobile is often the most convenient or only option. However, with increases in the cost of fuel and more attention being focused on environmental issues, it is important to discuss options for reducing dependence on the single-occupied vehicle and increasing alternative transportation options. The Franklin County region and the FRCOG have been working on bringing sustainable transportation to the area and mitigating GHGs. In fact, the FRCOG recently received an Excellence in Commuter Options (ECO) Award from the state for its work in supporting and promoting alternative transportation in Franklin County. This section highlights the many planning activities that have recently been completed or are ongoing in this topic area.

Park and Ride Lots

Park and ride lots provide an opportunity to those who do not live on or within walking distance of public transit routes to travel to an intermediary location and take public transportation or carpool with other commuters. There are currently several park and ride lots in Franklin County. They include:

- Charlemont Park & Ride (Route 2)
- Whately Park & Ride (Route 116/5/10)
- Greenfield Visitors Center Park & Ride

- Sunderland Park & Ride (Route 47)

In 2014, FRCOG published the *Evaluation of Franklin County Park and Ride Facilities* which assessed the performance of the existing park and ride lots. The study found that the majority of the



MassDOT Park and Ride lot in Whately on Route 5/10.

park and rides had consistent and regular use. Most of the lots had utilization rates between 20 percent and 35 percent, which show that the lots are being used but that they have additional capacity for more users. The Charlemont Park & Ride is the least used facility with a utilization rate of only 8 percent. The study recommended that marketing of these facilities be conducted as residents of the region may be unaware of their presence.

Ridesharing

There are several programs and internet-based resources that promote carpooling or “ridesharing” in Franklin County and the wider region. The major program to encourage ridesharing across Massachusetts is through MassRIDES, which is a MassDOT-run program. MassRIDES provides travel assistance by providing information about transportation alternatives, including: transit, biking, and walking. It helps employers to establish vanpool or carpool options for employee commutes. There are also several other locally-based internet rideshare resources that attempt to connect ride-seekers with drivers offering rides within the region. They include: RideBuzz.org and Craigslist.org.

Shared Vehicle Program

Car sharing is defined as the joint access and ownership of a car. For individuals who do not need a car every day, it is a way to have a car when you really need one while relying on alternatives for most trips. Zipcar is a national vehicle sharing program that is available in Massachusetts. This service allows users to pay a fixed rate for the use of a vehicle that they are able to reserve when they need it. Members can reserve cars for time periods ranging from just hours to many days. These reservations include the cost of fuel, insurance, and reserved parking. Presently, there are six Zipcars located in Amherst and four Zipcars in downtown Northampton. There are no Zipcars sited in Franklin County.

Promote Walking and Bicycling

There has been a lot of support in Franklin County for increased walking and bicycling. Bicycling and walking play a large role in community livability by impacting the environment, community health and wellness, and the transportation network. Shifting to these transportation modes can result in a significant decrease in transportation-related GHG emissions, while promoting the health of residents. In Franklin County, several reports and studies have examined the safety and security of the pedestrian and bicyclist transportation network and have sought to increase the quality and quantity of these facilities. Chapter 10 summarizes in detail the efforts to encourage bicycling and walking in the region.



Canalside Trail in Turners Falls

Increase Use of the Public Transit System

In Franklin County, several reports and studies have examined the demand for public transit in the region. The following studies and reports have focused on transit service and include: *Alternative Transportation Plan*, *West County Transit Study*, *North County Transit Study*, and *Survey of Select Populations Regarding Transit Service*. The major strength of the transit system is that most of the major commuting routes within Franklin County are currently being served by public transit. Another beneficial aspect of the public transit system is the inclusion of bicycle racks on all of the buses. This coordination between various modes of transportation can help decrease dependence upon the single occupant motor vehicle and help mitigate GHG emissions. On the other hand, these studies and public outreach has shown that a weakness with the current status of transportation options within Franklin County is the limited service of public transit. This is primarily due to the high cost of providing transit service to such a rural population. See Chapter 9: “Transit and Paratransit Services,” for recommendations on how to improve the public transit system in Franklin County.

Alternative Transportation Map

One of the ways the FRCOG is working to promote mode shift and healthy transportation options is through the creation of an alternative transportation map. Building on the work of the Massachusetts Department of Energy Resources (DOER) and MassRIDES, the maps will

show areas of concentrated transit service, including Greenfield Community College, Deerfield, Orange, and Shelburne Falls, and will highlight the available connections to the alternative transportation network, such as bicycle routes, shared-use paths, and park and ride lots. In addition to providing information on the available transportation alternatives, this effort will also include a report and map identifying where barriers to use of alternative transportation still exist, thus creating an opportunity to reduce these barriers and increase the connectivity of the alternative transportation network.

Passenger Rail in the Region

In 2014, passenger rail returned to Franklin County with the Amtrak “Vermont” service stopping at the new rail station constructed at the John W. Olver Transit Center. This service, running on the recently improved Knowledge Corridor, connects Springfield, MA and White River Junction, VT with two runs per day – one northbound and one southbound. In addition to this newly established service, there is also planning work underway to establish a regional rail system with more frequent commuter-like service between Greenfield and Springfield. See Chapter 7: “Passenger Rail,” for more information on passenger rail in the region.

Telecommunications

Telecommuting can help decrease GHG emissions by allowing workers to eliminate some daily commutes and work from home instead. It is anticipated that the number of employees telecommuting in Franklin County will continue to increase in the future. This is due in large part to the recent and pending expansion of the telecommunications infrastructure and high-speed internet services in the region.

Improve Traffic Operations

Reduce Congestion and Travel Time

The time vehicles spend idling in traffic congestion is a direct contributor to GHG emissions. In order to prevent idling and decrease time spent in traffic, the efficiency of the transportation network needs to be examined. The 2012 Greenfield Signals Improvement Project included the redesign of eight signalized intersections in Greenfield to improve the intersection efficiency and decrease emissions.

Improve Communication and Notification

Technology can help improve the efficiency of the transportation network through driver communication and advanced notice of incidents to users of the transportation network. Improvements in communication may include better and more frequent use of variable message signs to notify drivers of upcoming construction schedules or delays. Another form

of notification is the Massachusetts Travel Advisory System which is a free service provided for the Commonwealth in which a motorist can call 511 to see if a select number of major roadways are experiencing congestion. This service includes Interstate 91 and Route 2 in western Massachusetts. Motorists who are aware of an incident can take an alternate route, which will result in an avoidance of the congestion and a decreased travel time.

Adaption of Transportation Infrastructure to Climate Change

Transportation-related GHG emissions contribute significantly to climate change. In turn, however, climate change will also have an impact on the transportation system. A special report from the Transportation Research Board (TRB), “Potential Impacts of Climate Change on U.S. Transportation,” determined that the following impacts on the transportation system can be expected:

- Prolonged hot days lead to increased risk of wildfire;
- Compromised pavement integrity (hotter weather = softer pavement and increased rutting from traffic);
- Deformed rail lines;
- Adversely affected bridge operation due to thermal expansion of bridge joints;
- Increased flooding and inundation of bridges, roads and rail lines; and
- Heavier rainfall will require redesign and replacement of drainage structures.

It is clear that not only does the county need to take an active role in reducing GHG emissions by promoting sustainable transportation, but it also needs to plan for these potential changes and their impact on transportation infrastructure. The following strategies are aimed at preparing for the impacts of climate change on the future of the transportation system and the incorporation of this concern into planning practices.

Plan for More Severe and Frequent Flooding in the Region

A safe transportation system protects users from hazards, including hazards resulting from climate-related stresses on the system. It is expected that more extreme weather events will lead to more precipitation and flooding. It is critical that infrastructure be planned and maintained to be able to withstand a higher frequency of these events. Tropical Storm Irene in August 2011 provided crucial information on the vulnerability of the transportation network in the event of major flooding. This event flooded and washed out many roads and bridges in the region. Such events may be more severe in the future, so a revised examination of potential flooding areas and critical infrastructure should be performed for the whole region. The FRCOG has prepared updated flood maps with evacuation routes for each municipality in order to assess changes in flooded areas as a result of climate change and its effects on emergency preparedness.

Preserve Aspects of the Transportation System that are Threatened by Climate Change

More prolonged heat spells and hotter days are expected with climate change, along with increased precipitation events. These effects will directly impact pavement condition. Warmer days will result in the softening of the pavement for longer periods of time and may lead to more rutting. Additional concerns regarding stormwater runoff should be examined when updating or redesigning the roadway network to accommodate the potential need for more drainage. FRCOG has developed a Pavement Management Program for the region to monitor this critical component of the transportation infrastructure.

Improve Emergency Response Times via an Updated GIS Network

There are several tools which can aid in improving emergency response to an event. Emergency vehicle preemption is one proactive tool that can be used. Another aspect of emergency response is the accuracy of the information emergency responders use to reach an event. The FRCOG has identified changes to the Road Inventory File (RIF), which contains information used by emergency responders about the transportation network. The updated RIF will help improve emergency response times.

Recommendations for Transportation and Climate Change

The transportation sector is the second largest contributor to GHG emissions, which are a primary cause of climate change. There are many steps that have already been taken in the region to help mitigate GHG emissions. The region has also taken a proactive role in preparing for the impact of climate change on the regional transportation system. This chapter demonstrates how Franklin County is working towards the state's goal of reducing GHG as laid forth in the Massachusetts Clean Energy and Climate Plan for 2020.

Recommendations

- Continue to promote a reduction in GHG emissions in the region through the mitigation strategies described in the chapter.
- Continue to promote sustainable and alternative forms of transportation to the singly-occupied motor vehicle.
- Develop local and regional emergency action plans for events related to climate change.
- Continue to implement a Pavement Management System for the county.

13

Safety & Security



2016 Regional Transportation Plan

13 Transportation Safety & Security

Transportation Safety

The safety of the transportation network can strongly impact travel patterns and behaviors as well as the health of a community. Many factors influence the safety of the transportation network including the road environment, road user, and vehicle factors. The overall goal for traffic safety is to minimize the consequences or the probability of a vehicle being involved in a hazardous situation.¹ For Franklin County, this most often results in safety treatments on existing roadways that range from routine maintenance to complete intersection redesign. The most critical components of a safe, secure, and efficient transportation network are coordination and communication among emergency personnel, law enforcement officers, and the users of the transportation network.

Guiding Policies and Programs

In 2013, MassDOT completed an update to the *Massachusetts Strategic Highway Safety Plan (SHSP)* that examined transportation safety in the Commonwealth from a variety of perspectives. The 2013 SHSP identified 15 emphasis areas, each addressing a contributing crash factor. The emphasis areas are grouped into three tiers:

- Strategic emphasis areas represent at least 10 percent of annual fatalities or severe injuries on Massachusetts roadways;
- Proactive emphasis areas represent less than 10 percent of annual fatalities or serious injuries; and
- Emerging emphasis areas focus on improvement of traffic safety and crash data systems.

Franklin County's safety efforts generally fall within the Strategic emphasis areas, particularly regarding Intersections, Lane Departures, Pedestrians, and Bicycles. These themes examine crash and injury data to determine ways to reduce infrastructure-related and user-related issues. Much of the safety-related issues in Franklin County are the result of infrastructure issues and conflicts between motorists and to a lesser extent, between motorists and pedestrians/bicyclists.

The Highway Safety Improvement Program (HSIP) is a federal transportation funding program under MAP-21 to achieve reductions in traffic fatalities and serious injuries on all public roads. For a highway safety improvement project to be eligible for HSIP funding

¹ Evans, Leonard. Traffic Safety, Science Service Society. Bloomfield Hills, Michigan. 2004.

through the regional Transportation Improvement Program (TIP), it must meet certain criteria:

- The candidate project must be consistent with the State SHSP and correct or improve a hazardous road location or feature or address a highway safety problem.
- The project location must originate from a comprehensive list of high crash locations. The primary sources of data are the MassDOT database (based on the RMV Crash Data System) and the High Crash Locations report. The High Crash Locations report identifies crash clusters based on weighted severity of geo-located crashes. For a crash cluster to be eligible for HSIP, the total number of “equivalent property damage only” crashes must be within the top 5 percent of all crash clusters in that region (the “equivalent property damage only” method of weighting crash severity is described in further detail later in this chapter). Regional planning agencies may also use their own edited data to more accurately rank locations within their region, as the FRCOG does with the Most Hazardous Intersections in Franklin County report.
- All HSIP project candidate locations must be evaluated with a Road Safety Audit.

Background

Traffic incidents have a direct impact on the safety of a community as well as the operations and security of the transportation network. Nationally, in 2013 alone, over 2 million people were injured in traffic-related incidents and almost 33,000 people lost their lives.² This is the equivalent of 90 people dying each day, or one life lost every 16 minutes. Fatal traffic crashes were the leading cause of death for persons aged 5 to 24.³ The national fatality rate, however, has declined by more than 25 percent since 2003. Massachusetts continues to have the lowest fatality rate (0.64 per 100 million VMT) in the country in 2012.⁴

Table 13-1 presents a summary of traffic-related fatalities for each county in Massachusetts, from 2009 to 2013. Franklin County ranks among the lowest (next to Nantucket and Dukes Counties) in the number of traffic-related fatalities per year. Over the five year period from 2009 to 2013, there were 23 traffic-related fatalities in Franklin County. Overall, this represents a 44 percent decrease compared to the five year period from 2004 to 2009, in which 41 traffic-related fatalities occurred in Franklin County. Across the state a similar trend is observed with a 48 percent decrease from the previous five-year total. The recent decline in traffic related fatalities at both the state and county levels from 2009 to 2013 denotes a positive trend that should continue to be monitored.

² National Highway Traffic Safety Administration, Traffic Safety Facts Research Note, December 2014.

³ National Center for Health Statistics, National Vital Statistics System, 2013 data.

⁴ Insurance Institute for Highway Safety, Highway Loss Data Institute, 2012 data.

**Table 13-1: Traffic Related Fatalities in Massachusetts
by County, 2009-2013**

County	Fatalities					Total
	2009	2010	2011	2012	2013	
Barnstable County	15	17	22	26	16	96
Berkshire County	16	14	14	13	8	65
Bristol County	37	49	57	50	35	228
Dukes County	1	2	0	2	1	6
Essex County	38	31	42	45	33	189
Franklin County	1	5	5	5	7	23
Hampden County	32	34	30	36	29	161
Hampshire County	11	6	8	9	7	41
Middlesex County	64	46	56	50	37	253
Nantucket County	0	0	0	0	0	0
Norfolk County	36	34	27	43	25	165
Plymouth County	25	29	35	31	43	163
Suffolk County	21	26	24	29	22	122
Worcester County	43	54	54	44	63	258
Massachusetts	340	347	374	383	326	1770

Source: National Highway Traffic Safety Administration, U.S. Department of Transportation. Traffic Safety Facts for Massachusetts: 2009 - 2013. Fatalities (All Crashes).

The number of traffic-related pedestrian fatalities in Massachusetts increased overall in the five year period from 2009 to 2013, shown in Table 13-2. This is similar to the trend nationally over this same period.⁵ Between 2009 and 2013, the number of traffic-related deaths of pedalcyclists (bicyclists and other riders of wheeled vehicles powered solely by pedals, e.g. tricycles and unicycles) in Massachusetts was rather consistent, except for a spike in 2012. Nationally, pedalcyclist fatalities have been increasing each year since 2011.⁶

**Table 13-2: Pedestrian and Cyclist Traffic Fatalities in
Massachusetts, 2009-2013**

Mode	Fatalities					Total
	2009	2010	2011	2012	2013	
Pedestrian	48	58	58	72	68	304
Pedalcyclist	6	6	5	15	6	38

⁵ National Highway Traffic Safety Administration, Pedestrians Traffic Safety Fact Sheets, 2009-2013.

⁶ National Highway Traffic Safety Administration, Bicyclists and Other Cyclists Traffic Safety Fact Sheets, 2009-2013.

Identification of the Most Hazardous Intersections in Franklin County

Approximately every three years the FRCOG conducts an analysis of crash data to determine high crash locations in the county. All crashes resulting in estimated property damage in excess of \$1,000, injuries, or fatalities must be reported to and recorded by police. Those involved in the crash or the investigating police officer must complete a standard report form and forward it to the Massachusetts Registry of Motor Vehicles (RMV). This data is used to create the Most Hazardous Intersection Report, which was most recently updated in 2012 and covers the crashes recorded between 2007 and 2009.

From 2007 through 2009, there were 3,454 crashes in Franklin County. The majority of these crashes occurred in Greenfield (1,003 crashes), Deerfield (442), Orange (389), and Montague (343). These towns are the most densely developed and/or most trafficked areas of the county. To determine how hazardous each intersection is, a nationally recognized measure called “Equivalent Property Damage Only” (EPDO) was applied to each crash.

EPDO assigns points to each crash based on its severity. There are three crash severity levels: “property damage only” which is assigned one point; “injury” which is assigned five points; and “fatality” which is assigned ten points. Only one category is assigned to each crash, reflecting the most serious crash level. For further analysis, the EPDO rate per Million Entering Vehicles (MEV_{EPDO}) is calculated to weigh the severity of crashes at an intersection by the volume of traffic entering the intersection. In this way, the MEV_{EPDO} reflects both the severity of crashes as well as the rate of exposure to crashes.

Using the results of the MEV_{EPDO} calculation, the top fifty most hazardous intersections were ranked and the results are contained in Tables 13-3 and 13-4 and shown on a map at the end of Chapter 5. The map shows that the vast majority of the identified hazardous intersections are located within the most heavily traveled corridors in the county. Due to a tie for 50th place, there are actually 51 intersections on the list. The town with the largest number of hazardous intersections on the list was Greenfield (16 intersections), followed by Montague (12 intersections), and Deerfield (6 intersections). Of the 51 most hazardous intersections, 23 appeared on the previous list of the top 50 most hazardous intersection in Franklin County produced from crash data from 2004 through 2006.

The most hazardous intersection in Franklin County was G Street at Eleventh Street in Turners Falls at a stop-controlled intersection. Although only three crashes were reported at this intersection within the analysis period, two resulted in injuries and the traffic volume is comparatively low, approximately 1,000 vehicles per day. This resulted in an MEV_{EPDO} of 10.05, indicating a high rate of exposure to crashes at this intersection.

Table 13-3: Most Hazardous Intersections in Franklin County, Rank 1 - 25

Rank	Town	Intersection	Number of Crashes	EPDO Total	MEV _{EPDO} Rate	MEV _{CRASH} Rate	MEV _{CRASH} Rate Comparison	MassDOT MEV _{CRASH} Rate	Type of Control
1	Montague	G St./Eleventh St.	3	11	10.05	2.73	>	0.67	Unsignalized
2	Orange	Myrtle St./Pleasant St.	4	12	5.48	1.82	>	0.67	Unsignalized
3	Montague	Route 63/North Leverett Rd.	10	27	4.36	1.62	>	0.67	Unsignalized
4	Erving	Route 63/Semb Dr./Forest St.	3	11	4.19	1.14	>	0.67	Unsignalized
5	Greenfield	Wells St./Allen St.●	8	28	3.82	1.09	>	0.67	Unsignalized
6	Orange	Route 202/Route 122	11	31	3.77	1.34	>	0.67	Unsignalized
7	Montague	Montague City Rd./Turnpike Rd.	8	24	3.37	1.12	>	0.67	Unsignalized
8	Northfield	Route 10/Gill Center Rd.	7	27	2.98	0.77	>	0.67	Unsignalized
9	Greenfield	High St./Maple St.	12	28	2.97	1.27	>	0.67	Unsignalized
10	Buckland	Route 2/Route 112 South	3	16	2.92	0.55	<	0.61	Unsignalized
11	Greenfield	I-91/Route 2 Rotary	35	95	2.76	1.02	>	0.67	Unsignalized
12	Gill	Route 2/Main Road	16	49	2.76	0.9	>	0.83	Signalized
13	Greenfield	Conway St./Devens St.	3	11	2.7	0.74	>	0.67	Unsignalized
14	Greenfield	Chapman St./Pierce St.	4	12	2.58	0.86	>	0.67	Unsignalized
15	Montague	Route 47/North Leverett Rd.	4	12	2.49	0.83	>	0.67	Unsignalized
16	Montague	L St./Third St.	7	19	2.41	0.89	>	0.67	Unsignalized
17	Greenfield	Main St./Hope St.	14	38	2.4	0.88	>	0.67	Unsignalized
18	Montague	Turnpike Rd./Walnut St.	3	11	2.36	0.64	<	0.67	Unsignalized
19	Deerfield	Route 116 (North)/Route 5&10●	20	48	2.34	0.97	>	0.83	Signalized
20	Montague	Turners Falls Rd./Swamp Rd.	3	11	2.32	0.63	<	0.67	Unsignalized
21	Deerfield	Route 5&10/North Main St.●	15	27	2.26	1.26	>	0.67	Unsignalized
22	Greenfield	Route 2A/River St.	15	43	2.19	0.76	<	0.83	Signalized
23	Orange	East Main St./Water St.	8	20	2.15	0.86	>	0.67	Unsignalized
24	Montague	Avenue A/Fifth St.	8	16	2.09	1.04	>	0.67	Unsignalized
25	Whately	Route 5&10/Christian Ln.●	4	12	2.06	0.69	>	0.67	Unsignalized

Table 13-4: Most Hazardous Intersections in Franklin County, Rank 26 - 50

Rank	Town	Intersection	Number of Crashes	EPDO Total	MEV _{EPDO} Rate	MEV _{CRASH} Rate	MEV _{CRASH} Rate Comparison	MassDOT MEV _{CRASH} Rate	Type of Control
26	Montague	Unity St./Park St./Chestnut St.	8	20	2.04	0.82	>	0.67	Unsignalized
27	Greenfield	Colrain St./Elm St.	6	15	2.04	0.82	<	0.83	Signalized
28	Erving	Route 2/Route 2A	8	20	2.01	0.62	<	0.67	Unsignalized
29	Sunderland	North Main St./Gunn Mountain Rd.	3	11	2.01	0.55	<	0.67	Unsignalized
30	Orange	South Main St./West Main St.	13	25	1.95	1.01	>	0.83	Signalized
31	Greenfield	Elm St./West St.	4	16	1.94	0.49	<	0.67	Unsignalized
32	Greenfield	Deerfield St./Cheapside St.	6	26	1.83	0.42	<	0.67	Unsignalized
33	Montague	Montague City Rd./Cabot Station Rd.	3	15	1.82	0.37	<	0.67	Unsignalized
34	Greenfield	Federal St./Maple St./Garfield St.	8	24	1.75	0.58	<	0.67	Unsignalized
35	New Salem	Route 202/Route 122	4	12	1.72	0.57	<	0.67	Unsignalized
36	Northfield	Route 10/Main St./Millers Falls Rd.	8	16	1.64	0.82	>	0.67	Unsignalized
37	Montague	Avenue A/Seventh St.	9	17	1.63	0.87	>	0.83	Signalized
38	Greenfield	Colrain Rd./College Dr.●	7	16	1.61	0.7	>	0.67	Unsignalized
39	Greenfield	Federal St./Silver St.	15	35	1.59	0.68	<	0.83	Signalized
40	Bernardston	Route 10/Turners Falls Rd.	3	15	1.57	0.31	<	0.67	Unsignalized
41	Northfield	Route 10/Parker Ave./Warwick Rd.	5	13	1.51	0.58	<	0.67	Unsignalized
42	Greenfield	Deerfield St./Meridian St.	7	19	1.48	0.54	<	0.83	Signalized
43	Deerfield	Route 116/Sugarloaf Street●	12	28	1.46	0.63	<	0.83	Signalized
44	Greenfield	Bank Row/Olive St.	4	12	1.36	0.45	<	0.67	Unsignalized
45	Deerfield	Route 116/North Hillside Rd.	4	12	1.35	0.45	<	0.67	Unsignalized
46	Montague	Unity St./Central St.	4	12	1.34	0.45	<	0.67	Unsignalized
47	Sunderland	Route 116/Route 47●	11	23	1.32	0.63	<	0.83	Signalized
48	Greenfield	Federal St./Sanderson St.	7	19	1.32	0.49	<	0.67	Unsignalized
49	Deerfield	Route 5&10&116/Elm St.	12	24	1.3	0.65	<	0.83	Signalized
T-50	Northfield	Route 10/Fort Sumner Turner Rd.	4	12	1.3	0.43	<	0.67	Unsignalized
T-50	Deerfield	Route 5/10/ Old Main St.	4	12	1.3	0.43	<	0.67	Unsignalized

It is important to recognize that Franklin County is very rural and the majority of its roadways carry lower traffic volumes than the rest of the state. Therefore, they experience a lower probability of crashes. Inclusion on the most hazardous intersection list for Franklin County does not necessarily mean that an intersection has a safety problem. To see how these intersections on the list compare to those intersections statewide, they have been compared to ratings produced by MassDOT, using the measure of crash rate per million entering vehicles (MEV_{CRASH}).

The MEV_{CRASH} rate is used by MassDOT to develop average rates for both signalized and unsignalized intersections on a regional and statewide level. These average MEV_{CRASH} rates are used by MassDOT as a threshold for determining if a particular intersection warrants a more detailed safety evaluation. The MEV_{CRASH} rate has been provided in Tables 13-3 and 13-4. A total of 26 of the identified 51 intersections have MEV_{CRASH} rates that exceed the MassDOT average crash rates. This includes the top nine intersections and 21 of the top 25 intersections. Based on this threshold, these intersections warrant a more detailed safety evaluation.

There are 26 signalized intersections in Franklin County, 11 of which appear in the top 50 most hazardous intersection list. Of these 11 signalized intersections, four have a MEV_{CRASH} rate higher than the MassDOT District average.

Road Safety Audits

The Road Safety Audit (RSA) process is a formal safety examination of an existing or future roadway or intersection by an independent, multidisciplinary team to identify potential safety issues and opportunities for safety improvements. Identified safety improvements can range from short-term, low-cost options to large scale redesign improvements. However, the majority of the improvements are focused on short and mid-term, low to mid-cost safety improvements that can elicit immediate results. The RSA process involves an audit team that typically includes representatives from State and Local agencies, such as State Transportation Officials and local Public Safety Officers.

The FRCOG, in conjunction with MassDOT and local municipalities, has performed several RSAs in Franklin County. To date, nineteen RSAs have been conducted in the communities of Deerfield, Erving, Greenfield, Shelburne, Sunderland, and Whately. The locations of these RSAs are:

- Route 2 (Mohawk Trail) / Colrain Road / Big Y Driveway, Greenfield
- Cheapside Street at Hope Street, Greenfield
- Turners Falls Road at Loomis Road, Greenfield

- Route 2 (Mohawk Trail) at Colrain Shelburne Road, Shelburne
- Route 116 (Bridge Street/Amherst Road) at Route 47 (North Main Street / South Main Street), Sunderland
- Route 2 (Mohawk Trail) at Route 2A (West Orange Road), Erving
- Route 5/10 at Cheapside Street, Greenfield
- Route 2A (Mohawk Trail) at River Street / Shelburne Road, Greenfield
- College Drive at Colrain Road, Greenfield
- Route 5/10 (Greenfield Road) at Route 116 (Conway Road), Deerfield
- Route 5/10 (Greenfield Road) at North Main Street, Deerfield
- Route 116 (Sunderland Road) at Sugarloaf Street, Deerfield
- Interstate 91 at Exit 25, Deerfield
- Conway Street at Devens Street, Greenfield
- Conway Street at Grove Street, Greenfield
- Conway Street Corridor (between Devens Street and Grove Street), Greenfield
- Wells Street at Allen Street, Greenfield
- Interstate 91 at Exit 24, Whately
- Route 5/10 at Christian Lane, Whately

Audit team members from the FRCOG, MassDOT, FHWA, and municipalities joined the RSA team leader, hired by MassDOT. For each location, the RSA team performed a review of background information such as traffic volumes, crash information, and operation concerns from local officials. After a review of background information was performed, the team visited each of the locations to analyze these issues. Each RSA concluded with the audit team developing an extensive list of challenges, issues, and potential solutions for the study area. Final recommendations were provided to audit team members by the consultant, upon completion of the report.

Safety Improvement Projects

The following section describes safety projects that are currently planned and/or designed for the region.

Intersection Improvements at Route 2A (Mohawk Trail) and Shelburne Road/River Street

The intersection of Route 2A (Mohawk Trail), Shelburne Road, and River Street) in Greenfield is a four-way signalized intersection with busy commercial driveways on two corners and an elementary school on a third corner. Listed as a MassDOT HSIP cluster for 2008-2010, 2009-2011, and 2010-2012, and appearing at #22 the Most Hazardous Intersections in Franklin County list, an RSA was conducted at this intersection in 2011. The RSA revealed

that that most prevalent crash type was rear-end crashes at the stop lines and the driveway cuts. MassDOT advertised a project to improve traffic signal equipment, phasing and timing, lane configuration, pedestrian accommodations and sight distance in 2014; construction is expected to be complete in 2015.

Intersection Improvements at Route 5/10 and Cheapside Street

Cheapside Street in Greenfield splits at the approach to Route 5/10, forming three unsignalized intersections with a large triangular island in the middle. The location was identified as a MassDOT HSIP cluster for 2008-2010, 2009-2011, and 2010-2012, and appears at #32 on the Most Hazardous Intersections in Franklin County list. An RSA conducted in 2011 recommended reconfiguring the Cheapside Street intersection to a single T-intersection or a roundabout. However, MassDOT analysis projected that traffic congestion and delay would be increased with a single T-intersection, so they instead proposed a lower cost reconfiguration of the existing intersections, with improved pavement markings, signage, and pedestrian accommodations, with the intent to study the future operations and consider a roundabout as a future improvement if necessary.

Route 2 East Safety Improvements

The Route 2 Task Force, formed in 1994, developed recommendations for the corridor, grouped into seven sections in which to concentrate the identification and implementation of specific safety improvements. They were: Athol/Phillipston, Orange, Erving Paper Mill Corner, Erving Center, Farley, Erving side and Gill/Greenfield. Since December 2006, many of the recommendations have been successfully implemented. The following is a summary of proposed projects to address the outstanding recommendations of the Task Force.



Relocated portion of Route 2 in Erving that was completed as part of the Route 2 East Safety Improvements.

Route 2 at Route 2A

The intersection of Route 2 (Mohawk Trail) and Route 2A (West Orange Road) in Erving was identified as a MassDOT HSIP cluster in 2009 and appears on the Most Hazardous

Intersections in Franklin County list at #28. An RSA conducted in 2013 revealed that safety issues at the intersection included sight distance, travel speeds, intersection geometry and signage. MassDOT is currently designing improvement to realign the intersection, providing new turn lanes and improved pavement markings and signage. The project is scheduled to be advertised in 2016; the design is at the 25% stage with a construction cost estimate of \$400,000.

Erving Center

Safety improvements in Erving Center will focus on traffic calming and safer turning movements. The improvements include improved roadway alignment, sight distance, pedestrian accommodations, and traffic calming measures. Additional public meetings will be held to review the design. The estimated cost of the project is approximately \$18 million at the 25% design stage.

Farley

Safety improvements in the Farley area of Erving focus on providing safer turning movements by redesigning several intersections, with improved sight distance and pedestrian accommodations. The design for the project will be reviewed at several public hearings. The project is in the preliminary design phase with a construction cost estimate of \$6.5 million.

Gill-Greenfield

Safety improvements in the Gill-Greenfield area will incorporate a protected turn lane (westbound) to access Barton Cove, and provide safer turning movements for the Route 2 businesses near the Avenue A/Route 2 intersection. A MassDOT project to construct these improvements is currently at the 25% design stage with a construction cost estimate of approximately \$2.5 million.

Route 2 West Safety Improvements

The multi-year Route 2 West Safety Study produced a number of recommendations to address safety issues along the 22-mile Route 2 corridor from the Greenfield Rotary west to the Charlemont/Savoy Town Line. Several of these have been implemented, including improvements at the Greenfield Rotary and the creation of a shoulder “climbing lane” westbound over Greenfield Mountain (discussed in Chapter 5). A number of recommendations have resulted in projects currently under design or development by MassDOT, including the following.

Roadway Reconstruction and Village Center Traffic Calming on Route 2, Charlemont
Currently at the 25% design stage, this project includes sidewalk reconstruction, crosswalk enhancement and gateway traffic calming treatments. The project is scheduled to be advertised in 2017, with a current cost estimate of \$5,750,000.

Intersection Improvements at Route 2 and Colrain-Shelburne Road

Identified as a MassDOT HSIP Cluster for 2008-2010, an RSA was conducted at this intersection in 2014. The intersection has limited sight distance due to its location on a hill near a curve. MassDOT has proposed a safety project to improve sight distance and intersection operation; the project is currently under design and expected to be advertised for construction in 2016. Additional recommendations from an RSA at the Big Y Plaza and Colrain Road will be reviewed to assess their feasibility with MassDOT.



Charlemont Village Center

Transportation Security

Transportation security is one of the eight planning factors required by MAP-21 to be considered by Metropolitan Planning Organizations during their planning processes. Franklin County has a robust and coordinated regional emergency preparedness effort that augments transportation safety and security concerns. This infrastructure, combined with exercises, trainings and real-world emergency response and recovery efforts in the region, contribute to planning efforts that include safety and security as cornerstones. This section provides a summary of the transportation security activities currently occurring within the Franklin County region.

Emergency Planning Activities

To date, emergency planning activities in Franklin County have focused on general emergency preparedness and training, and on the coordination between towns and agencies in response to a disaster. There has been a large emphasis on training, improving emergency communications infrastructure, and evacuation planning. Two major committees working on emergency planning in Franklin County are the Franklin County Regional

Emergency Planning Committee and the Western Regional Homeland Security Advisory Council.

Franklin County Regional Emergency Planning Committee

The Franklin County Regional Emergency Planning Committee (REPC) has conducted a number of training exercises in the last few years for dealing with chemical spills. In 2004, in the first such training exercise in more than a decade, the FRCOG and the REPC conducted a full-scale training exercise at the Buckland Trolley Museum Railyard in Shelburne Falls. The exercise provided an opportunity to practice chemical spill response through a scenario of a chemical leak caused by a car crash with a rail tank car on an active rail line. The exercise was attended by responding departments from surrounding towns, the regional district (District 4) Hazardous Materials Team, and rail employees.

Since the completion of the HMEP in 2006, mock chemical spill exercises have been carried out for four Franklin County communities as part of implementing the plan. These exercises were designed to test the regional preparedness for dealing with chemical releases and the coordination of different agencies in addressing such situations and in dealing with evacuations.

From 2010 on, the REPC has annually conducted tabletop exercises, primarily focused on scenarios involving the spilling of ethanol. The Massachusetts Department of Environmental Protection found that ethanol production and transport had increased, and was expected to continue to increase, leading to the REPC prioritization of ethanol response. The REPC participated in the development of a local Ethanol Response Plan, and tested that plan in 2014. In the past year, PanAm railways and the Federal Railroad Administration provided the REPC with a safety seminar to address the concerns related to increased rail traffic and speed as passenger rail re-entered the region.

These types of preparedness activities help create a regional response that is timely and well-coordinated. Franklin County has experienced hazardous material spills in the past. In 1999, a train derailed in Charlemont and dumped an estimated 6,000 gallons of liquid latex into the Deerfield River. In September 2006, a freight train headed to the East Deerfield Railyard derailed onto its side with 20 cars carrying feed grain and vegetable oil going off the tracks. Fortunately, none of the cars ruptured. The rapid response to this derailment demonstrated successful coordination between local, regional, and state officials.

Western Region Homeland Security Advisory Council

The Western Region Homeland Security Advisory Council (WRHSAC) was created in 2004 with the charge of improving the region's ability to respond to large-scale emergency incidents or disasters. The WRHSAC covers the 101 cities and towns in Franklin, Berkshire, Hampden, and Hampshire Counties, and is one of five similar councils in Massachusetts. Members are appointed by the Massachusetts Executive Office of Public Safety (EOPS). WRHSAC's voting members represent regional transit, fire services, law enforcement, emergency medical services, public works, corrections, public health, hospitals, emergency management, and public safety communications.

The WRHSAC works with the regional planning agencies in each region, and a variety of state agencies. The seven primary goals are:

- Improve interoperability and information sharing;
- Mass care and sheltering;
- Emergency response, recovery planning and preparedness;
- Chemical, biological, radiological, nuclear and explosive preparedness;
- Plan regionally to protect critical infrastructure and key assets;
- Train first responders and local officials; and
- Conduct multi-jurisdictional exercises for large-scale incident management.



Utility trucks repairing power lines after a damaging storm in Whately.

The FRCOG and the other regional planning agencies that are part of the WRHSAC (the Berkshire Regional Planning Commission and the Pioneer Valley Planning Commission) collaboratively built tools to strengthen the region's response to large-scale natural and man-made disasters. These tools include:

- A regional mutual aid agreement to facilitate the sharing of resources among towns;
- Information on priority critical infrastructure;
- Evacuation planning for special needs populations; and

- A resource guide that highlights caches of emergency supplies throughout the region that are available to communities to borrow as aids to response and recovery.

The WRHSAC coordinated the purchase and expansion of an information sharing system for police, fire, and sheriff's departments of Franklin, Hampden, Berkshire, and Hampshire Counties. Also, improvements were made to the interoperable emergency communication system for police, fire, and EMS, with upgrades in Franklin County completed in 2013. The new radio system is not yet coordinated with the radio system used by the Franklin Regional Transit Authority (FRTA) and this is an area where improved communication may be warranted.

Large-Scale Evacuations

Consideration of the transportation network in evacuation planning is essential and due to its rural nature, there are several challenges for large-scale evacuations in Franklin County. A map is contained at the end of the chapter which shows the main evacuation routes for the region. These routes have been identified by local communities through their emergency planning processes and the creation of their Comprehensive Emergency Management Plans (CEMPs) that all municipalities are required to develop.

The FRCOG worked with the Berkshire Regional Planning Commission (BRPC), Pioneer Valley Planning Commission (PVPC), and the University of Massachusetts Transportation Center (UMTC) to prepare preliminary evacuation plans for Western Massachusetts. The project developed evacuation maps that take into account conditions that would initiate evacuation flow out of the area, and conditions that might initiate evacuation flow into the region. The maps have been distributed to each municipality in the four counties of Western Massachusetts.

Flooding and Evacuations

Flooding is a major threat to the region's roadways; as evidenced by the damage from Tropical Storm Irene in 2011. Much of the transportation network in the hilltowns of Western Franklin County was extremely compromised by the storm – there were whole sections of towns that were inaccessible due to road closures. Following the event, the FRCOG mapped the storm damage and compared the flooding to the official 100-year flood plain. Many of the impacted roads did not appear to be located in the 100-year flood plain, which means that more of the transportation network was vulnerable to flooding than previously expected. To improve future evacuation efforts, the FRCOG then examined the existing official primary, secondary, and tertiary evacuation routes that are mapped for local emergency responders, and compared them with known or likely flooding events in order to determine if alternative

evacuation routes were necessary or even possible. Maps were then created for each town showing where flooding events may impact the official evacuation routes. These maps also show potential alternative evacuation routes that the towns could use in case of road closure on the existing official routes.

Multi- Hazard Mitigation Planning

Since 2005, the FRCOG has worked with twenty-five Franklin County towns to create and update local multi-hazard mitigation plans. As of June 2015, twenty-two Franklin County towns have FEMA-approved plans that make them eligible for state and federal grant monies to fund pre- and post-disaster mitigation projects to reduce the impact of future natural and man-made disasters. Local adoption of these plans followed an extensive public participation process that included the opportunity for key stakeholders to provide input.

The Federal Emergency Management Agency (FEMA) and the Massachusetts Emergency Management Agency (MEMA) define hazard mitigation as any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards such as flooding, snow and ice storms, high winds, hurricanes, wildfires, earthquakes, tornadoes, micro-bursts, ice jams, landslides, and wildfires; and from man-made hazards such as hazardous material spills. Mitigation efforts undertaken by communities can help to minimize damage to: infrastructure (such as roads, sewers, utility transmission lines, and water supplies); buildings; and natural, cultural, and historic resources.



**Conway Street in Shelburne Falls
following Tropical Storm Irene in 2011**

The most recent updates of the multi-hazard mitigation plans included:

- identifying the most important hazards that have a high probability of impacting each community based on historical data from national, state, and local sources;
- conducting a risk assessment to identify infrastructure and population groups at the highest risk for being damaged or injured by hazards;
- inventorying and assessing current Town hazard mitigation policies, programs, and regulations; and

- identifying and prioritizing mitigation actions in a five-year Action Plan to prevent future damage to property and loss of life.

In addition, the new plans review recent development trends and include updated maps showing critical facilities and infrastructure in each Town, such as schools, hospitals, shelters, police and fire stations, public water supplies, communication towers, dams, culverts, and areas of localized flooding (often from beaver dams). Other sections of the plans provide current information on the National Flood Insurance Program (NFIP) and potential funding sources for hazard mitigation plan implementation. Finally, the plans provide guidelines for monitoring, evaluating and updating the plan; recommendations for incorporating the plan into existing planning mechanisms; and suggestions for providing continued public involvement throughout the five-year implementation process.

Recommendations for Transportation Safety

- Support design and construction of Route 2 Safety improvements in Erving Center, Farley, and Gill/Greenfield.
- Work with MassDOT to implement safety improvements at commercial driveways along Route 2 West in Greenfield.
- Continue to be involved in the process related to the Strategic Highway Safety Plan.
- Continue to monitor high crash locations and work with MassDOT and Towns to develop recommendations to improve safety.
- Continue to conduct Road Safety Audits as necessary and appropriate and work with MassDOT and municipalities to implement safety recommendations.
- Investigate recent traffic fatalities in Franklin County for trends and opportunities for safety improvements.
- Investigate locations of serious injury bicycle and pedestrian crashes and make recommendations for improvements.

Recommendations for Transportation Security

- Continue working with the Franklin County Regional Emergency Planning Committee (REPC) and the Western Region Homeland Security Advisory Committee (WRHSAC) to expand the region's preparedness to manage emergency incidents, including those that impact the regional transportation network.
- Continue operability and management of the new radio communications system with assistance from the REPC and WRHSAC.
- Explore options for expanding the radio communication capabilities between emergency management personnel and the Franklin Regional Transit Authority.

- Assist employers and critical facilities with the creation of plans for continued operations and employee transportation in the event of an emergency in the region.
- Support regional and local planning efforts to mitigate natural hazards; and coordinate and integrate natural hazard mitigation activities as appropriate with emergency planning and operations.



Road Safety Audit (RSA) team members in the field.

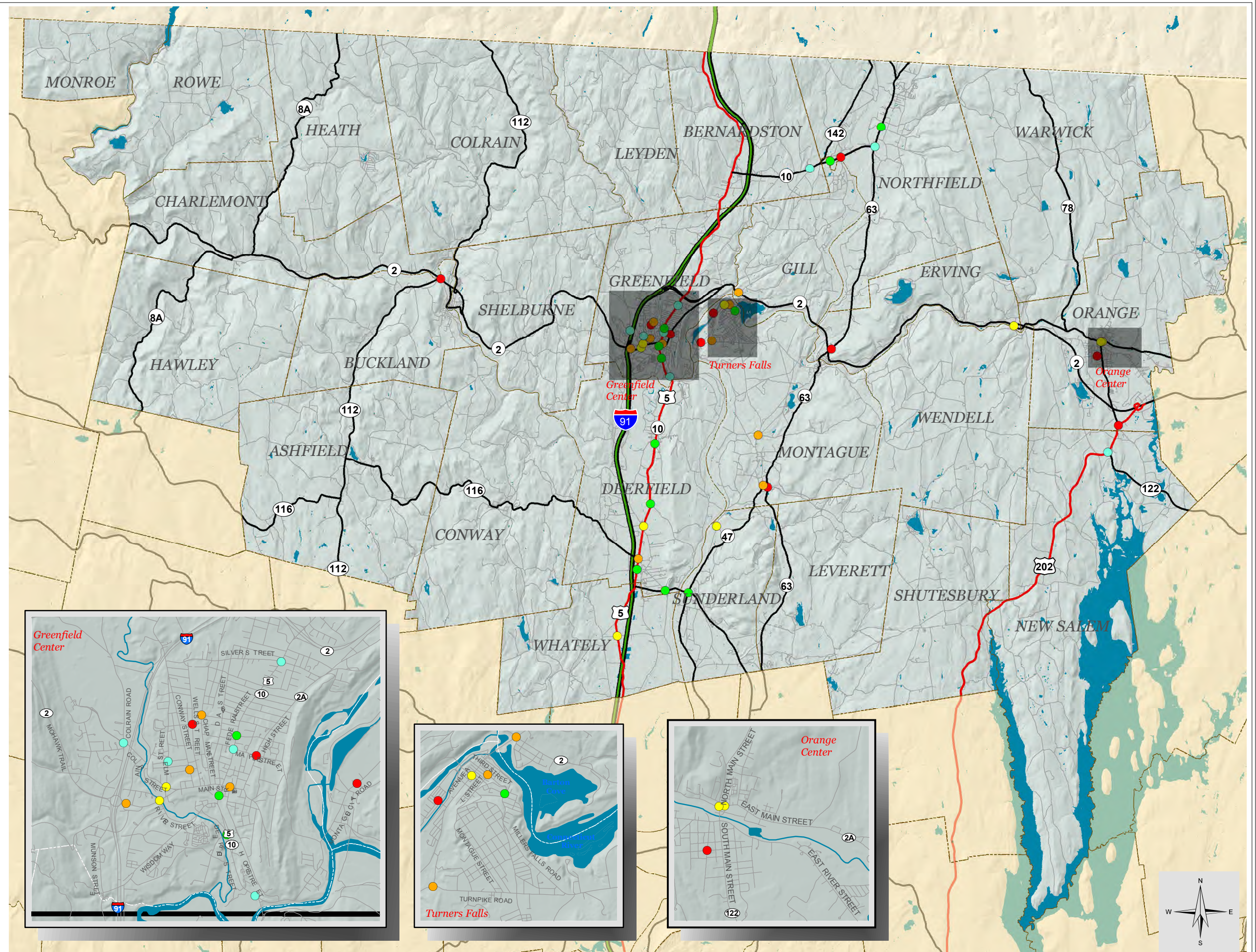
Top 50 Most Hazardous Intersections 2007 - 2009

- Rank = 1-10
- Rank = 11-20
- Rank = 21-30
- Rank = 31-40
- Rank = 40-50

0 1.25 2.5 5 Miles



Franklin Regional
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Critical Infrastructure & Evacuation Routes

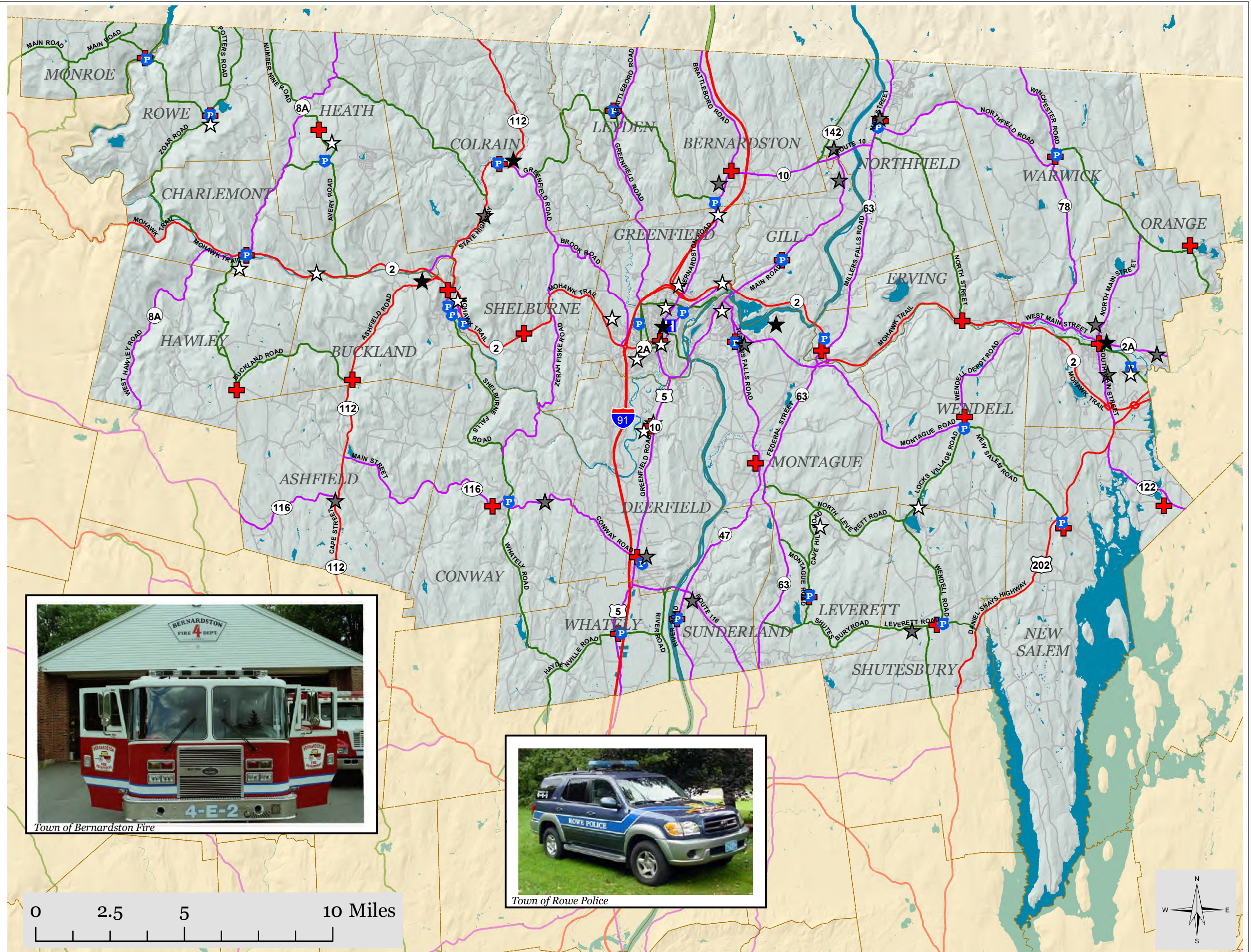
- Police Department
- Fire Department
- Hospital

- ★ Primary
- ★ Secondary
- ☆ Terciary

— Main Route
— Secondary Route
— Tertiary Route



Franklin Regional
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14

Air Quality Conformity Determination



2016 Regional Transportation Plan

14 Air Quality Conformity Determination

The 1990 Clean Air Act Amendments (CAAA) require Metropolitan Planning Organizations within ozone nonattainment areas to perform air quality conformity determinations prior to the approval of Regional Transportation Plans (RTPs) and Transportation Improvement Programs (TIPs). Conformity is a way to ensure that federal funding and approval goes to those transportation activities that are consistent with air quality goals. Since most all of Massachusetts (with limited exceptions) was designated on May 21, 2012 by the United States Environmental Protection Agency as “unclassifiable/attainment” for the latest ozone standard, a conformity determination for the Franklin Region Regional Transportation Plan is not required. Further details and background information are provided below:

A nonattainment area is one that the U.S. Environmental Protection Agency (EPA) has designated as not meeting certain air quality standards. A maintenance area is a nonattainment area that now meets the standards and has been re-designated as maintaining the standard. A conformity determination is a demonstration that plans, programs, and projects are consistent with the State Implementation Plan (SIP) for attaining the air quality standards. The CAAA requirement to perform a conformity determination ensures that federal approval and funding go to transportation activities that are consistent with air quality goals. The entire Commonwealth of Massachusetts was previously classified as nonattainment for ozone, and was divided into two nonattainment areas. The Eastern Massachusetts ozone nonattainment area included Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Plymouth, Suffolk, and Worcester counties. Berkshire, Franklin, Hampden, and Hampshire counties comprised the Western Massachusetts ozone nonattainment area. With these classifications, the 1990 Clean Air Act Amendments (CAAA) required the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), the two major precursors to ozone formation to achieve attainment of the ozone standard.

The 1970 Clean Air Act defined a one-hour national ambient air quality standard (NAAQS) for ground-level ozone. The 1990 CAAA further classified degrees of nonattainment of the one-hour standard based on the severity of the monitored levels of the pollutant. The entire commonwealth of Massachusetts was classified as being in serious nonattainment for the one-hour ozone standard, with a required attainment date of 1999. The attainment date was later

extended, first to 2003 and a second time to 2007.

In 1997, the EPA proposed a new, eight-hour ozone standard that replaced the one-hour standard, effective June 15, 2005. Scientific information had shown that ozone could affect human health at lower levels, and over longer exposure times than one hour. The new standard was challenged in court, and after a lengthy legal battle, the courts upheld it. It was finalized in June 2004. The eight-hour standard is 0.08 parts per million, averaged over eight hours and not to be exceeded more than once per year. Nonattainment areas were again further classified based on the severity of the eight-hour values. Massachusetts as a whole was classified as being in moderate nonattainment for the eight-hour standard, and was separated into two nonattainment areas—Eastern Massachusetts and Western Massachusetts. In March 2008, EPA published revisions to the eight-hour ozone NAAQS establishing a level of 0.075 ppm, (March 27, 2008; 73 FR 16483). In 2009, EPA announced it would reconsider this standard because it fell outside of the range recommended by the Clean Air Scientific Advisory Committee. However, EPA did not take final action on the reconsideration so the standard would remain at 0.075 ppm.

After reviewing data from Massachusetts monitoring stations, EPA sent a letter on December 16, 2011 proposing that only Dukes County would be designated as nonattainment for the new proposed 0.075 ozone standard. Massachusetts concurred with these findings.

On May 21, 2012, (77 FR 30088), the final rule was published in the Federal Register, defining the 2008 NAAQS at 0.075 ppm, the standard that was promulgated in March 2008. A second rule published on May 21, 2012 (77 FR 30160), revoked the 1997 ozone NAAQS to occur one year after the July 20, 2012 effective date of the 2008 NAAQS.

Also on May 21, 2012, the air quality designations areas for the 2008 NAAQS were published in the Federal Register. In this Federal Register, the only area in Massachusetts that was designated as nonattainment is Dukes County. All other Massachusetts counties were classified as unclassifiable/attainment.

Therefore, conformity for ozone in the Franklin TPO was required until July 20, 2013 for only the 1997 ozone standard. Since this Regional Transportation Plan will complete its collective development, review, and approval by the Federal Highway Administration after July 20, 2013 – when this standard was revoked, and since the latest area designations to do not require conformity under the current 2008 standard, the TPO does not need to perform a conformity

determination for ozone on the program.

15

Recommended Projects



2016 Regional Transportation Plan

15 Recommended Projects

As part of the development of the *Franklin Regional Transportation Plan*, regional needs and priorities for a 25 year horizon (from 2016 through 2040) were identified. Recommended projects were developed based on these identified needs and priorities. This chapter contains a summary of the recommended projects. These recommendations were identified during an extensive public participation process that included outreach, informational meetings and input sessions throughout Franklin County. In addition to the public input that was received, transportation staff conducted research and analyzed transportation-related regional data to identify transportation trends and needs. The findings and trends that shaped the recommended projects are summarized in the following paragraphs.

Overall, an interest in alternative transportation and more environmentally sensitive options was expressed strongly and frequently throughout the public participation process. The need for improved public transit in the region was the most frequently expressed comment during the public participation process. Many individuals expressed a desire to take public transit for economic (to save money) and/or environmental reasons (reduced emissions/better for the environment), but are unable to do so because of limited routes and/or schedules. The continued support and enthusiasm for bicycling in Franklin County for both transportation and recreational purposes was confirmed during the public input sessions. An interest in increased sustainability and the threat of climate change was also a frequent theme in the public's comments.

The safety of the roads in Franklin County was also a strong theme. The great strides that have been made to make the roads in Franklin County safer, particularly on Route 2 and Route 116, were acknowledged. However, the fact that there are additional improvements that could be evaluated and possibly implemented was recognized. Specific recommendations for additional safety evaluations are detailed in the plan and in this chapter.

The rural and scenic character of Franklin County remains an important consideration as road and bridge projects are planned and implemented. The scenic and natural resources of the area should be taken into consideration when improvements are designed so that they can be implemented in a context sensitive manner.

The many Scenic Byways that run through the area make Franklin County a special place and help bring tourism and economic development to the region. As a result, the needs of

tourists and the unique requirements of a scenic byway should be taken into consideration during any transportation project planning.

Regional demographic figures show that Franklin County's population is aging. Future transportation planning should take this into consideration. The transportation needs of senior citizens should be considered.

Additional high-speed broadband service that is currently being planned and implemented in the region will also have an impact on the county's transportation needs in the future. Improved internet access will allow more people to have the option of working from home. In addition, the arrival of broadband may attract new businesses and residents to Franklin County, which could increase the number of vehicles on the roads as people may choose to live in more remote parts of the region.

Recommended Projects

MAP-21 requires that all recommended projects with a total cost of \$20 million or greater, or that are regionally significant for air quality conformity purposes, be included in the Regional Transportation Plan. The Franklin County region does not have any projects of this magnitude recommended for the twenty-five year planning horizon. However, there are many projects that are a priority for the Franklin County transportation network.

The following is a listing of the twenty-five top transportation recommendations to be pursued through 2040. The recommended projects are not listed in a ranked, prioritized order, but instead represent the most important projects to the region. The projects are being listed to highlight their importance. The map at the end of the chapter shows the location of the recommendations.

Top 25 Transportation Recommendations for Franklin County

Safety Improvements

- Advance the planned Route 2 East Safety Improvements in Farley, Erving Center, and Gill/Greenfield.
- Implement safety and traffic flow improvements on Route 2 West in Greenfield near the commercial developments west of the Interstate 91/Route 2 rotary.

Major Highway Projects

- Rehabilitate the General Pierce Bridge in Greenfield/Montague.
- Reconstruct Conway Street, South Street, and Conway Road in Buckland.

- Resurface and repair North Main Street (Rt. 47) in Sunderland.
- Reconstruct North Main Street in Orange.
- Improve intersections at Main Road, Jacksonville Road, and Greenfield Road in Colrain.
- Resurface roadway and construct pedestrian accommodations on Routes 5/10 in Whately and Deerfield
- Reconstruct and improve drainage system on Haydenville Road in Whately.

Public Transit and Healthy Transportation Options

- Implement regional commuter passenger rail service between Greenfield and Springfield.
- Plan for east-west passenger rail service between Franklin County and Boston.
- Expand fixed bus service routes throughout the county, including to the North County towns of Bernardston and Northfield.
- Increase frequency and extend bus service hours during evenings and weekends to better serve the public.
- Create additional Park and Ride lots throughout the county.

Pedestrian and Bicycling

- Design and implement safety improvements for bicyclists/pedestrians on Turners Falls Road connecting Greenfield and Turners Falls.
- Design and implement safety improvements for bicyclists/pedestrians on Leyden Road in Greenfield.
- Remove the existing Schell Bridge over the Connecticut River in Northfield and replace with new pedestrian and bicycle bridge
- Implement Complete Streets recommendations on East Main Street (Route 2A) in Orange connecting the Town Center with Walmart and other commercial services.
- Construct a bikeway to connect the downtowns of Athol and Orange.
- Construct an Erving-Wendell Bike Path to connect Erving Center with Farley and Erving side without having to travel on Route 2.
- Construct a sidewalk to Mohawk Trail Regional High School and Middle School along Route 112 and North Street in Buckland.
- Advocate for bicycles to be permitted on the Amtrak Vermonter passenger train.
- Continue implementation of trailblazing signs along the Franklin County Bikeway.

Scenic Byways and Community Development

- Purchase conservation restrictions, agricultural preservation restrictions or land in fee from willing land owners to permanently protect important areas along the Scenic Byways.
- Create a parking garage near the Regional Transit Center to facilitate regional commuting and downtown revitalization efforts.

Complete List of Recommended Projects

The following is a table of projects categorized by the timeframe for implementation and the type of project (advocacy, planning/design, construction/implementation, monitoring or ongoing activities). The Estimated Total Cost reflects the cost of project construction/implementation.

RECOMMENDATIONS							
The abbreviations used in the table describe the actions to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, R – Recommendation for MassDOT to Prioritize, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Bernardston	Bridge Replacement: Brattleboro Road. (Projis Number 604189) (Bridge Number B-10-004)	P/D	R				\$2,658,630 (includes 4% inflation rate) (\$2,185,200 original estimate)
Bernardston and Greenfield	Interstate maintenance on I-91 (Projis No 607182)	P/D and C/I					\$2,293,920 (includes 4% inflation rate)
Buckland	Road Reconstruction and Minor Widening: Conway Street, South Street and Conway Road. (Projis Number 606463)	P/D	C/I				\$6,529,046 (includes 4% inflation rate) (\$5,160,000 original estimate)
Buckland	Bridge Replacement: Route 2 over Deerfield River (Projis Number 607674) (Bridge Number B-28-009)	P/D	R				\$26,301,967 (includes 4% inflation rate) (\$21,618,300 original estimate)
Buckland / Shelburne	Bridge Rehabilitation: Route 2A (Bridge Street) over Deerfield River (Projis Number 605882) (Bridge Number B-28-022, S-11-001)	P/D	R				\$1,228,819 (includes 4% inflation rate) (\$1,010,000 original estimate)
Buckland	Construct a sidewalk to Mohawk Trail Regional High School and Middle School along Route 112 and North Street.	P/D	C/I				\$1,107,154 (includes 4% inflation rate) \$875,000 (Original estimate)
Charlemont	Roadway reconstruction and Village Center traffic calming on Route 2 (Projis No 606507)	P/D and C/I					\$5,980,000 (includes 4% inflation rate)

RECOMMENDATIONS

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MassDOT to Prioritize, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Charlemont	Bridge Replacement: Zoar Road over Pelham Brook (Projis No. 605286; Bridge No. C-05-002).	P/D	R				\$3,122,912 (includes 4% inflation rate) (\$2,566,806 Original Estimate)
Charlemont	Bridge Replacement: Route 2 over Trout Brook (Projis No. 606158; Bridge No. C-05-020).	P/D	R				\$1,632,809 (includes 4% inflation rate) (\$1,342,050 original estimate)
Colrain	Bridge Replacements: Heath Road over the North River. (Projis No. 607584; Bridges Number C-18-020).	P/D	R				\$2,655,800 (includes 4% inflation rate)
Colrain	Intersection improvements on Main Road, Jacksonville Road, and Greenfield Road (Projis No 607538)	P/D and C/I					\$1,622,400 (includes 4% inflation rate)
Colrain	Resurfacing and related work on Route 112. (Projis No. 608165)	P/D	C/I				\$1,976,000 (includes 4% inflation rate) (\$1,900,000 original estimate)
Deerfield	Bridge Reconstruction: Route 116 over the Mill River. (Projis No 605732) (Bridge Number. D-06-030)	P/D	C/I				\$2,798,302 (includes 4% inflation rate) (\$2,300,000 original estimate)
Deerfield	Resurfacing on Route 5/10 from Hillside Road to Deerfield River (Projis No 607504)	P/D	C/I				\$2,038,897 (includes 4% inflation rate) (\$1,611,370 original estimate)
Deerfield	Bridge Preservation: McClelland Farm Road over railroad. (Projis Nor 602320) (Bridge Number. D-06-023)	P/D and C/I					\$6,477,190 (includes 4% inflation rate)

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Deerfield and Greenfield	Resurfacing on Route 5 and Montague City Road (Projis No 603876)	P/D	C/I				\$5,139,142 (includes 4% inflation rate) (\$4,224,000 original estimate)
Deerfield and Whately	Resurfacing on Route 5/10 from Old State Road to N. Hillside Road (Projis No 606011)	P/D and C/I					\$2,395,787 (includes 4% inflation rate)
Deerfield, Greenfield, and Whately	Interstate Maintenance on I-91 (Projis No 607478)	P/D and C/I					\$11,082,160 (includes 4% inflation rate)
Erving	Streetscape and Pedestrian Improvements on Route 63	P/D and C/I					\$450,000 (federal earmark)
Erving	Intersection improvements at Route 2 and 2A (Projis No 607246)	P/D and C/I					\$400,000 (includes 4% inflation rate)
Erving	Bridge Replacement: Church Street Bridge over Keyup Brook. (Projis Nor 603604) (Bridge Number. E-10-011)	P/D and R					\$2,130,195 (includes 4% inflation rate) (\$1,820,900 original estimate)
Erving	Design and Construction of Safety Improvements: Route 2 in Erving Center. (Projis Number 604818)	P/D	P/D	C/I			\$19,298,350
Erving	Design and Construction of Safety Improvements: Route 2 in Erving in Farley Safety. (Projis No. 604959)	P/D	P/D	C/I			\$6,692,300
Erving and Northfield	Road Reconstruction: Route 63. (Projis Number 601565)	P/D	P/D	C/I			\$4,597,586
Greenfield	Culvert repair under I-91 (Projis No 608120) (Bridge No G-12-039)	P/D	R				\$1,754,788 (includes 4% inflation) (\$1,500,000 original estimate)

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Greenfield	Interstate Maintenance on I-91 (5 miles total) (Projis No 607565)	P/D	R				\$9,822,039 (includes 4% inflation) (\$7,762,500 original estimate)
Greenfield	Structural steel girder painting on I-91 over Country Club Road (Projis No 606526) (Bridge No G-12-054, G-12-055)	P/D and R					\$2,901,951 (includes 4% inflation) (\$2,480,600 original estimate)
Greenfield	Superstructure replacement on I-91 over BMRR (Projis No 606548) (Bridge No G-12-052, G-12-053)	P/D	P/D	R			\$17,916,341 (includes 4% inflation) (\$14,725,926 original estimate)
Greenfield	Construct a Franklin Regional Transit Center Maintenance Facility	R					\$20,000,000
Gill and Greenfield	Improvements and upgrades on Route 2 from Adams Rd to French King Bridge (Projis No 605036)	P/D and R					\$3,118,148 (includes 4% inflation) (\$2,665,406 original estimate)
Greenfield and Montague	Bridge Rehabilitation: General Pierce Bridge on Montague Road over the Connecticut River. (Projis Number 601186) (Bridge Numbers G-12-020 and M-28-001).	P/D	R				\$22,316,344 (includes 4% inflation rate) (\$18,342,408 Original Estimate)
Heath	Bridge Replacement: SR8A (Jacksonville Street over Mill Brook) (Projis No 607671) (Bridge Number H-14-001).	P/D C/I					\$1,901,880 (includes 4% inflation rate)
Heath	Bridge Replacement: Sadoga Road over Burrington Brook. (Projis No 607118) (Bridge Number H-14-009).	P/D C/I					\$1,684,800 (includes 4% inflation rate)
Heath	Bridge Replacement: Jacksonville Street over West Brank Brook (Projis No 607678) (Bridge No H-14-007)	P/D	R				\$2,082,356 (includes 4% inflation) (\$1,711,545 original estimate)

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Leverett	Resurfacing and drainage improvements on Route 63 (Projis No 606894)	P/D	P/D	C/I			\$727,558 (includes 4% inflation) (\$575,000 original estimate)
Leverett	Investigate possible improvements (to road alignment and/or sign locations) to improve safety and traffic flow at the intersection of Cushman Road and Shutesbury Road in Leverett.	P/D	P/D				
Monroe	Reconstruction and related work on Readsboro Road (Projis No 607325)	P/D	P/D	C/I			\$2,530,638 (includes 4% inflation rate) (\$2,000,000 original estimate)
New Salem and Shutesbury	Road Reconstruction: Route 202. (Projis Number 603820)	P/D	P/D	C/I			\$4,905,545 (\$4,032,000 original estimate)
Northfield	Bridge Replacement: Birnam Road over Mill Brook. (Projis Number 602319) (Bridge Number N-22-010)	P/D	R				\$3,130,733 (includes 4% inflation rate) (\$2,573,234 original estimate)
Northfield	Road Reconstruction: Route 63 (Main Street) and Route 10. (Projis Number 604820)	P/D	P/D	C/I			\$1,584,082 (includes 4% inflation rate) (\$1,302,000 original estimate)
Northfield	Bridge Removal: Schell Bridge over Conn. River & replacement with pedestrian bridge (Projis No 607588) (Bridge No N-22-002)	P/D and C/I					\$9,489,893 (includes 4% inflation rate) (\$8,436,480 original estimate)
Orange	Bridge Replacement: Holtshire Road over Millers River (Projis No 607527) (Bridge No O-03-009)	P/D and C/I					\$4,105,629 (includes 4% inflation rate)

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Orange	Bridge Replacement: Logan Road. (Projis number 603727) (Bridge Number O-03-001)	P/D	R				\$1,518,383 (includes 4% inflation rate) (\$1,248,000 original estimate)
Orange	Bridge Replacement: Brookside Road over Pan Am Railroad. (Projis number 604881) (Bridge Number O-03-015)	P/D and R					\$3,971,155 (includes 4% inflation rate) (\$3,264,000 original estimate)
Orange	Bridge Replacement: Route 2 over Route 202. (Projis number 606309) (Bridge Number O-03-021)	P/D and R					\$16,520,173 (includes 4% inflation rate) (\$13,578,378 original estimate)
Orange	Road Reconstruction: North Main Street. (Projis Number 603371)	P/D and C/I					\$4,831,725 (includes 4% inflation rate)
Shelburne	Bridge replacement on Bardwell Ferry Road over Dragon Brook (Projis No 607548) (Bridge No S-11-006)	P/D and C/I					\$2,466,464 (includes 4% inflation rate)
Shelburne	Intersection improvements on Route 2 and Colrain/Shelburne Road (Projis No 607539)	P/D and C/I					\$520,000 (includes 4% inflation rate)
Sunderland	Resurfacing on North Main Street (Route 47) from Route 116 to Claybook Drive (Projis No. 607245)	P/D	C/I				\$1,824,979 (includes 4% inflation rate) (\$1,500,000 original estimate)
Whately	Rehabilitation of Haydenville Road, from Conway Road to Williamsburg T.L. (Projis No. 605983)	P/D	P/D	C/I			\$2,189,975 (includes 4% inflation rate) (\$1,800,000 original estimate)
Whately	Superstructure replacement and substructure repairs SR 10 over I-91 (Projis No. 605354) (Bridge No. W-33-020)	P/D	R				\$5,839,934 (includes 4% inflation rate) (\$4,800,000 original estimate)

RECOMMENDATIONS

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A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, R – Recommendation for MassDOT to Prioritize, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Franklin County Towns along the I-91 Corridor	Plan for regional commuter rail service on the Knowledge Corridor Line.	P/D and C/I					
Region-wide	Continue to monitor the implementation of the recommendations of the Fitchburg Commuter Rail Service Expansion Study, particularly the recommendations that could most affect Franklin County commuters, including: the creation of a park and ride facility in Gardner and the extension of commuter rail service west of Fitchburg.	M	M	M	M	M	
Greater Greenfield and the Northern Tier Area of Franklin County	Promote the extension of east-west passenger rail service from Fitchburg to Greenfield.	A	A	A	A	A	
Erving and Wendell	Pursue funding to complete the design work for the Erving-Wendell Bike Path.	P/D	C/I				
Orange	Support the completion of the design of the Millers River Greenway to connect the Riverfront Park in Orange with the Alan Rich Environmental Park in Athol.	O	O	O	O	O	
Greenfield, Deerfield, Sunderland	Provide better and more frequent transit service between GCC and UMASS-Amherst.	A and P/D	A and P/D	A and P/D	A and P/D	A and P/D	
Region-wide	FRTA Fixed Route Vehicle Replacement	C/I					\$593,250

RECOMMENDATIONS

The abbreviations used in the table describe the actions to be taken during the specified timeframe:
A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, R – Recommendation for MassDOT to Prioritize, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Region-wide	FRTA Fixed Route Vehicle Replacement	C/I					\$197,750
Region-wide	FRTA Fixed Route Vehicle Replacement	C/I					\$395,500
Region-wide	FRTA Fixed Route Vehicle Replacement	C/I					\$593,250
Region-wide	FRTA Demand Response Vehicle Replacement	C/I					\$265,000
Region-wide	FRTA Demand Response Vehicle Replacement	C/I					\$318,000
Region-wide	FRTA Demand Response Vehicle Replacement	C/I					\$212,000
Region-wide	Work with the FRTA, PVTA, and the MART to advocate for the continued operation of and permanent funding for Route 32 and Route 31 and address additional needs for expanding these routes to include additional evening and weekend service.	A	A	A	A	A	
Region-wide	Pursue funding to expand FRTA routes to include additional daily runs and weekend hours.	O	O	O	O	O	
Region-wide	Install additional Franklin County Bikeway Logo signs, on the remaining segments of the Franklin County Bikeway network as outlined in the <i>Franklin County Bikeway Plan Update (2009)</i> .	C/I	O	O	O	O	\$200,000
Region-wide	Include pedestrian and bicycle infrastructure improvements when appropriate into the scope of road construction projects.	O	O	O	O	O	
Region-wide	Continue developing and implementing a Pavement Management System.	P/D	O	O	O	O	
Region-wide	Work with GreenDOT to promote more energy efficient and cleaner forms of transportation.	A	A	A		A	

RECOMMENDATIONS

The abbreviations used in the table describe the actions to be taken during the specified timeframe:
A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, R – Recommendation for MassDOT to Prioritize, M – Monitoring, O – Ongoing activities

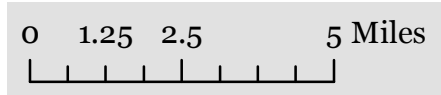
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Region-wide	Continue working with the Franklin County Regional Emergency Planning Committee (REPC) and the Western Region Homeland Security Advisory Committee (WRHSAC) to expand the region's preparedness to manage emergency incidents, including those which impact the regional transportation network.	O	O	O	O	O	
Region-wide	Coordinate the radio communication capabilities between emergency management personnel and the Franklin Regional Transit Authority.	O	O	O	O	O	
All Scenic Byways in Franklin County	Continue work to permanently protect scenic and agricultural lands along the scenic byways by purchasing conservation restrictions, agricultural preservation restrictions, and/or fee interest from willing landowners.	O	O	O	O	O	\$1,500,000
Connecticut River Scenic Farm Byway Area in Erving	Design and construct streetscape improvements on Route 63 in Erving. Projis No. 607253	P/D and C/I					\$450,000 Funded through FY2004 Section 115 Appropriation
Mohawk Trail Scenic Byway in Greenfield	Design improvements at the Upper Pioneer Valley Visitors Center in Greenfield.	P/D and C/I					\$500,000 Funded through FY2004 Section 115 Appropriation

Franklin County Massachusetts

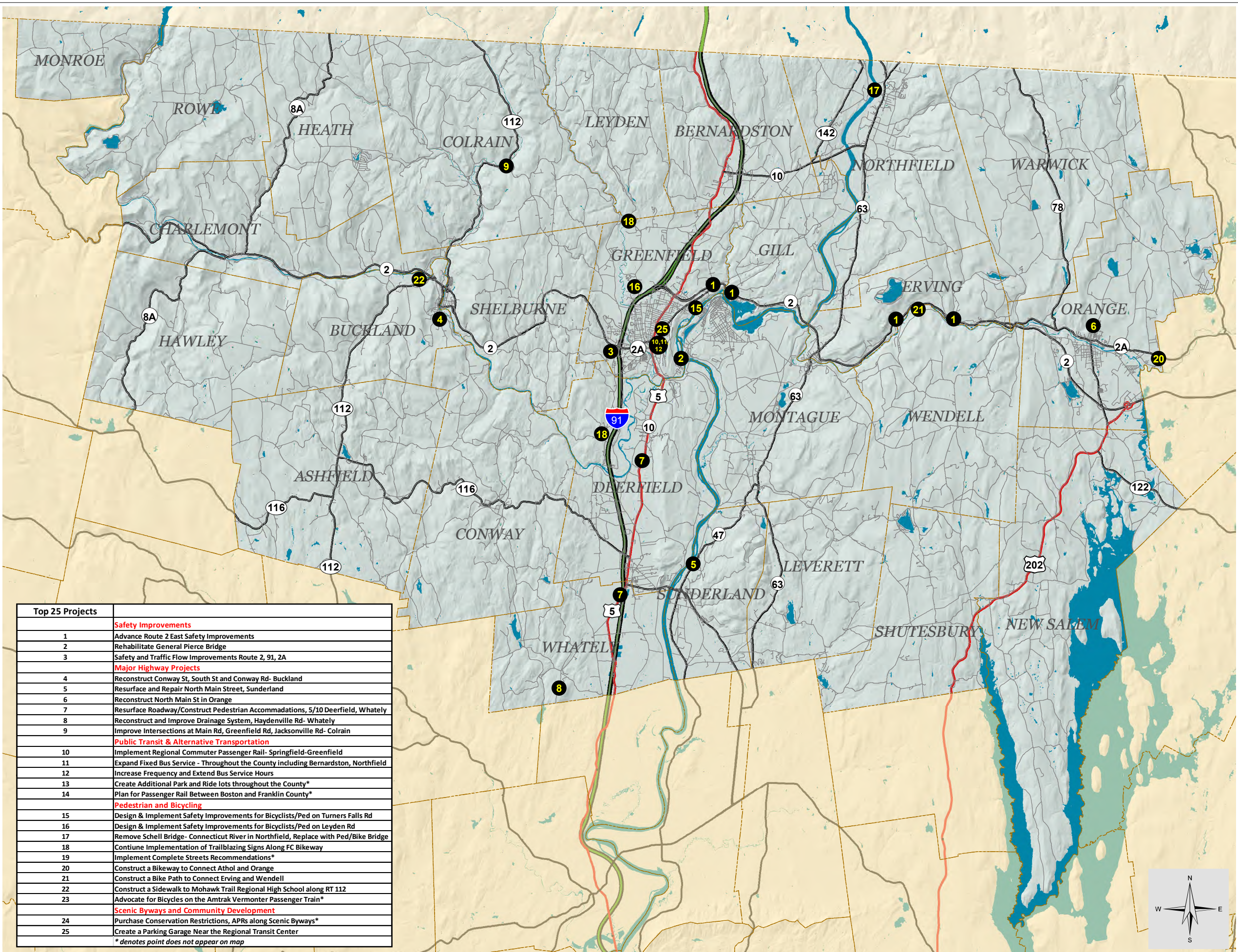
Top 25 Recommended Transportation Projects

*Project Area**

**See table below, not all projects
can be shown geographically*



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



16

Financial Constraint



2016 Regional Transportation Plan

16 Financial Constraints

It is important to provide a financial context to transportation planning so that projects can be prioritized based on the projected availability of future funding. This plan is financially constrained based on financial information provided by MassDOT for 2016 to 2040.

Funding Available

Funding Available for Highway and Bridge Projects

The Federal Highway Administration funds and State Highway and Bridge funds were projected statewide for five year timeframes for the following funding categories:

- Regional Discretionary Funding;
- Interstate Maintenance (IM);
- National Highway System (NHS)
- Statewide Bridge Projects;
- Statewide Infrastructure;
- Remaining Statewide Programs; and
- Non-Federal Aid Preservation.

Local aid funding sources such as Chapter 90 and the MassWorks Programs are not included in the MassDOT funding projections. The MassDOT projections were based on the assumption that funding levels would increase by a 4 percent annual inflation rate after the year 2016.

Based on these funding projects, a total of \$794,241,050 is anticipated to be available to Franklin County for highway-related transportation improvements between 2016 and 2040. The forecasted funding levels for the Franklin Region were based on the projected amount available to Metropolitan Planning Organizations statewide, and the following factors:

- **Funds for Regional Discretionary:** Projected regional funding for Regional Discretionary projects are based on the regional share formula for the Statewide Highway Funds developed by the Massachusetts Association of Regional Planning Agencies (MARPA). Under the MARPA formula, the Franklin Region is allotted 2.54% of the statewide funds distributed to the regions.
- **Funds for Bridges:** Projected regional funding for bridge improvements and repairs is based on each region's percentage of federal-aid eligible bridges. The Franklin Region's percentage is 6.83%.

- **Funds for Interstate Maintenance:** Projected regional funding for interstate maintenance projects is based on the regional share of Interstate lane mileage, excluding the Massachusetts Turnpike. The Franklin Region's percentage is 3.78%.

Funding Available for Transit Projects

As with highway and bridge funding, the estimated costs of transit recommendations and projected revenue also needs to be reviewed to ensure financial constraint. Estimates of available transit funding were provided by the MassDOT Rail and Transit Division. Federal funds must be used for capital projects. Capital funds may only be spent on tangible items such as equipment, preventative maintenance of vehicles, facilities and equipment, ADA services, facility improvements and the purchase of vehicles. Operating expenses must come from grants, state and local funding and farebox revenue. Operating expenses cover salaries, benefits, advertising and marketing expenses and other cash needs. A summary of the projected transit funding for the Franklin Regional Transit Authority from 2016 to 2040 is in Table 16-2 at the end of this chapter.

The transit funds were projected on a statewide basis by MassDOT Rail and Transit Division, and are broken down in this Plan by the same five time periods as the highway and bridge funds, into the following federal funding categories:

- Urbanized Area Formula Funding (5307 Program);
- Non-Urbanized Area Formula Funding (5311 Program);
- State of Good Repair Grants (5337 Program); and
- Bus and Bus Facilities Funding (5539 Program).

A total of \$34,880,520 is anticipated to be available to Franklin County for transit-related transportation projects between 2016 and 2040. Projects formerly funded under JARC, a SAFETEA-LU program, are now eligible activities under Section 5311. The forecasted funding levels assume a 1.5% annual inflationary increase beyond the year 2016.

For funding under the 5310 Program, regional funding estimates were based on the past distribution of Mobility Assistance Program (MAP). Using this approach, the Franklin Region receives 5.73% of the statewide 5310 Program funds. This approach was agreed to by the MassDOT Rail and Transit Division and the Massachusetts Association of Regional Transit Agencies (MARTA), and varies from a previous approach that based each region's funding on its percentage of the statewide elderly and disabled population. The projected State Capital Investment and State Assistance for Operations funds for each region were estimated based on current funding levels for these programs.

Project Cost Estimates

Cost estimates are included for construction/implementation related projects. Cost estimates were gathered from a variety of sources including the Franklin Regional Transit Authority, FRCOG, towns' Departments of Public Works, and MassDOT. Costs for projects that are expected to extend beyond 2016 include an inflation factor of 4% per year.

Financially Constrained Plan

For financial planning purposes, Regional Transportation Plans are required to show that there is sufficient funding projected to be available to cover the costs of major projects (those projects that are estimated to cost greater than \$20 million). The Franklin Region has only two future recommended projects that are estimated to exceed \$20 million and each of these are bridge projects, which is funded by the Statewide Bridge Program. MassDOT has estimated that between 2016 and 2040 there is \$301,955,482 available for bridge projects for the Franklin Region. Over the same time frame, the Franklin Regional Transportation Plan recommends that MassDOT prioritize \$48,618,311 in major bridge projects. Because this amount does not exceed the projected available funds, this Plan is financially constrained.

Tables 16-1 and 16-3 show the available highway and transit funding for the Franklin Region between 2016 and 2040. Table 16-2 shows that there is sufficient funding for the five-year timeframes and for the 2016 - 2040 period overall should MassDOT prioritize the recommended bridge projects for repair.

Table 16-1: Estimated Regional Transportation Plan Highway Funding for 2016-2040						
Funding	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	Total
Total Funding Available for Programming in the Franklin Region RTP	\$130,307,571	\$130,686,091	\$160,279,208	\$179,948,074	\$193,020,106	\$794,241,050
Regional Discretionary Funding	\$26,104,941	\$27,477,455	\$34,335,940	\$38,879,486	\$41,884,248	\$168,682,070
Interstate Maintenance Projects	\$13,304,221	\$12,591,809	\$15,734,776	\$17,816,899	\$19,193,861	\$78,641,565
National Highway System Projects	\$4,530,507	\$4,387,742	\$5,482,940	\$6,208,477	\$6,688,293	\$27,297,960
Statewide Bridge Projects	\$50,114,059	\$48,534,863	\$60,649,636	\$68,674,864	\$73,982,333	\$301,955,482
Statewide Infrastructure Projects	\$991,301	\$960,063	\$1,199,698	\$1,358,450	\$1,463,436	\$5,972,948
Remaining Statewide Programs	\$31,625,375	\$33,420,997	\$41,763,015	\$47,289,357	\$50,944,068	\$205,042,813
Non-Federal Aid Preservation Projects	\$12,698,500	\$12,888,978	\$13,079,455	\$13,269,933	\$13,460,410	\$65,397,275

Table 16-2 Bridges

Costs	Amount of Funding per Timeframe					
	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	Total
Current Estimate	\$22,316,344	\$26,301,967	\$0	\$0	\$0	\$48,618,311
Funds Available	\$50,114,059	\$48,534,863	\$60,649,636	\$68,674,864	\$73,982,333	\$301,955,482
Reserve	\$27,797,715	\$22,232,896	\$60,649,636	\$68,674,864	\$73,982,333	\$253,337,171

Table 16-3: Estimated Massachusetts Transit Program Funding Forecasts 2016-2040						
Timeframe	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	Total
Total Funding Available for Programming in the Franklin Region RTP	\$6,895,036	\$6,235,546	\$6,717,454	\$7,236,605	\$7,795,879	\$34,880,520
Section 5307	----	----	----	----	----	----
Section 5311	\$6,895,036	\$6,235,546	\$6,717,454	\$7,236,605	\$7,795,879	\$34,880,520
Section 5337	----	----	----	----	----	----
Section 5339	----	----	----	----	----	----



Franklin County Regional Transportation Plan 2016



Providing a vision for the county's transportation systems in a context that is suitable for the rural nature of the region.

2016 Franklin County Regional Transportation Plan

July 28, 2015

Prepared by:

Franklin Regional Council of Governments

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Prepared under Contract #75369 in cooperation with the Massachusetts Department of Transportation, the U.S. Department of Transportation, and the Federal Highway Administration.

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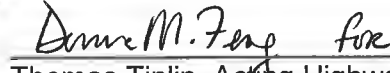
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Chapter 2) Public Participation & Title VI Activities
Chapter 3) Goals and Performance Measures
Chapter 4) Regional Economic & Demographic Profile
Chapter 5) Road & Bridge Infrastructure
Chapter 6) Freight Transport
Chapter 7) Passenger Rail
Chapter 8) Airports
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Chapter 10) Livability – Bicycle & Pedestrian Facilities
Chapter 11) Scenic Byways & Tourism
Chapter 12) Sustainability & Climate Change
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Chapter 14) Air Quality Conformity Determination
Chapter 15) Recommended Projects
Chapter 16) Financial Constraint
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Appendix B) Summary of Public Input
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Appendix D) Demographic Projections by Town (Populations & Employment)

2016 Franklin County Regional Transportation Plan


Franklin County Transportation Planning Organization Committee of Signatories Endorsement of the 2016 Regional Transportation Plan


Stephanie Pollack, Secretary and CEO
MassDOT

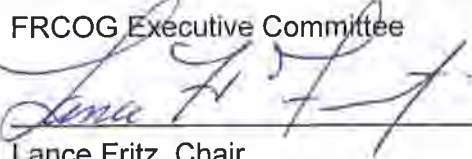

Date


Thomas Tinlin, Acting Highway Administrator
MassDOT Highway Division


Date


Bill Perlman, Chair
FRCOG Executive Committee



Date


Lance Fritz, Chair
Franklin Regional Transit Authority



Date


William Martin, Mayor
City of Greenfield



Date


John Paciorek
Regionally Elected Representative to the FRCOG
Executive Committee


Date


Robert Dean
West County Sub-Regional Appointment


Date


Jonathan Edwards
Central County Sub-Regional Appointment


Date


Vacant
East County Sub-Regional Appointment


Date

1

Introduction



2016 Regional Transportation Plan

1 Introduction

Franklin County is the most rural county in the Commonwealth and as a result, transportation planning and its implementation pose interesting challenges. Its sparse population and large geographical area naturally constrain many modes of travel beyond that of the private automobile. The large area that the transportation network covers also makes it difficult to efficiently provide improvements. In spite of these obstacles, Franklin County has had a very successful track record in maintaining, improving, and preserving its transportation system. The Franklin County Regional Transportation Plan, which is updated every four years, helps to provide a clear vision of the county and prioritizes its needs in a context that is suitable for the rural nature of the region.

This Regional Transportation Plan (RTP) update focuses on the importance of providing safe, efficient mobility for residents, while taking into account the rural character of the county. The RTP specifically emphasizes the following goals: preservation and improvement of the existing transportation system, while also maintaining the region's scenic and natural resources; providing residents healthy transportation options to the singly-occupied vehicle; strengthening the local economy and industries; and improving the region's livability and sustainability.

As in years past, safety is a major focus for this update to the RTP. The safety of the regional transportation system has been and will continue to be a high priority when evaluating and setting the agenda for regional transportation projects and activities. For this reason, projects that will make the existing system safer, more efficient, more secure and better able to support the goals of this RTP are prioritized in the region rather than those that will create new roads or add capacity to the region's roadways.

Through the completion of this Regional Transportation Plan update, the accompanying public participation process, and other planning work conducted by the Franklin Regional Council of Governments (FRCOG), it is clear that there is a very strong interest in expanding the transportation system to include additional healthy transportation options to the singly-occupied vehicle.

Specifically, there is a very strong demand for expanded public transit services either through the establishment of new routes to unserved areas of the region, or the initiation of additional service runs on existing routes. This has been strongly vocalized through the public outreach conducted in partnership with the Franklin Regional Transit Authority (FRTA)

for the FRTA's Comprehensive Service Analysis. The on-going expansion of the Franklin County Bikeway has prompted increased interest in bicycling as a healthy transportation option. Additionally, the establishment of new park-and-ride facilities throughout the county and the return of passenger rail services to the region has further heightened interest in other modes of transportation.

During the development of the 2016 Regional Transportation Plan, a particular emphasis was placed on public participation and outreach. Chapter 2 details the public participation process that was undertaken during the creation of this update. The Franklin County Transportation Planning Organization (TPO) recognizes that there are finite financial resources available to advance the recommendations of this report. Therefore, in order to ensure that the recommendations are realistic, a financial component has been included as part of this plan.

The Franklin Regional Council of Governments

The Franklin Regional Council of Governments (referred to as the FRCOG) serves the towns of the Franklin County region in western Massachusetts. The FRCOG integrates regional and local planning, human service advocacy and coordination, and the provision of municipal services such as cooperative purchasing and building inspection to advance the following regional goals:

- Balancing economic development with the protection of natural and cultural resources, and with the rural character and heritage of the region;
- Ensuring the most economical creation and delivery of public services in a rural region comprised of many political subdivisions; Building healthier communities by developing and connecting broad-based coalitions, which raise the level of expectations for community achievement.



The Franklin Regional Council of Governments offices

The FRCOG advocates on behalf of its member communities at the state and federal level to ensure that funding, programs, and policies are sensitive and respond to the rural nature, economic strengths, and human and natural resources of the region.

Additionally, the Franklin Regional Council of Governments serves as one of the Commonwealth of Massachusetts' thirteen (13) Regional Planning Agencies and Metropolitan Planning Organizations (MPO). An MPO consists of a Committee of Signatories, who together makes decisions about transportation planning goals, projects, priorities, and funding. In Franklin County, this group is referred to as the Franklin County Transportation Planning Organization (TPO). In its role as a TPO member, the FRCOG follows federal transportation planning regulations, including the establishment of a citizen advisory group to participate in transportation planning activities. The FRCOG staff is responsible for coordinating and working with the other TPO members to develop, implement, and routinely update the Regional Transportation Plan for Franklin County, as well as provide a wide range of other planning services.

The Franklin County TPO is governed by a Memorandum of Understanding (MOU) that was executed in 2006 and updated in 2010. As defined by the MOU, the TPO's committee membership contains nine members including the following representatives:

- The Secretary of the Massachusetts Department of Transportation (MassDOT) (to act as the Chair of the FCTPO);
- The Administrator of the Highway Division of MassDOT;
- The Chair of the Franklin Regional Council of Governments Executive Committee;
- The Chair of the Franklin Regional Transit Authority;
- The Franklin Regional Council of Governments Regionally Elected Official;
- The Mayor of Greenfield; and
- Three Franklin County Sub-Regional Appointments (one from the West County, one from Central County, and one from the East County sections of Franklin County as defined in the MOU).

The MOU defines that the FCTPO shall have the responsibilities of developing, reviewing, and adopting the region's annual transportation Unified Planning Work Program, the Regional Transportation Plan, the Transportation Improvement Program, and air quality conformity determinations. The MOU further states that the FCTPO shall have the responsibility of meeting all of the provisions of the federal 3C (Continuing, Cooperative, Comprehensive) Transportation Planning Process that may include: the initiation of studies, evaluation and recommendation of transportation improvements, and the programming of funds for transportation projects in the region for which funding is sought for implementation. The MOU also states the FCTPO shall be the forum for cooperative decision-making by officials of local government, regional planning commission, regional transit authority, and state officials representing state transportation agencies.

The MOU defines that the Franklin Regional Planning Board (FRPB) will act as an advisory board to the FCTPO in order to ensure that all transportation decisions are considered within the context of comprehensive regional planning. The composition of the FRPB includes a Select Board and Planning Board member designee from each town as well as 18 at-large members. The FRCOG is, by state designation and consistent with applicable federal transportation laws, the primary transportation planning staff for the FCTPO and also serves as the principal source of transportation planning for local and regional transportation projects.

Moving Ahead for Progress in the 21st Century (MAP-21)

The federal legislation that guides transportation planning (including Regional Transportation Plans) and projects is called Moving Ahead for Progress in the 21st Century (MAP-21). On July 6, 2012, President Obama signed MAP-21 into law as the latest federal transportation legislation, which guarantees funding for highways, highway safety, and public transportation. MAP-21 replaces three previous landmark federal transportation legislations: the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005, the Transportation Equity Act for the 21st Century (TEA-21) enacted in June of 1998, and the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. ISTEA revolutionized the planning and funding of highway and mass transit construction, maintenance, and operations throughout the United States. TEA-21 confirmed the federal government's commitment to establish a nationwide transportation system that reflects the country's environmental, social, and energy goals. SAFETEA-LU further built on the foundation of these two previous acts. MAP-21 transforms the policy and programmatic framework for investments by creating a new, streamlined and performance-based program. It also builds on many of the highway, transit, bike, and pedestrian programs and policies established under the previous transportation legislations.

MAP-21 addresses the many challenges facing our transportation system today, such as improving safety, reducing traffic congestions, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment, as well as laying the groundwork for addressing future challenges. MAP-21 expands the National Highway System to incorporate principal arterials not previously included. It consolidates the overall program structure into a smaller number of broader core programs. It focuses on a multi-modal program that promotes sustainability and economic development.¹ This Regional Transportation Plan was developed within the framework of MAP-21's requirements and focuses on the priorities of this transportation legislation.

¹ United State Department of Transportation, Federal Highway Administration, *A Summary of Highway Provisions in MAP-21*, FHWA website, <http://www.fhwa.dot.gov/map21/summaryinfo.cfm>, 2015.

The Regional Transportation Plan

MAP-21 requires that each MPO complete a regional transportation plan and update it at least every four years. MAP-21 further specifies that:

“...the Plan and TIPs for each metropolitan areas shall provide for the development and integrated management and operation of transportation systems and facilities (including accessible pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the metropolitan planning area and as an integral part of an intermodal transportation system for the State and the United States... The long-range plan must describe the performance measures and targets used in assessing system performance and progress in achieving the performance targets.”

In summary, a Regional Transportation Plan is a planning document that details existing conditions, identifies current deficiencies, and projects future needs related to transportation systems for a particular geographical area. The RTP reviews all types of transportation, including vehicular, rail, air, bus, bicycle, and pedestrian. The RTP is intended to set the vision for the region’s transportation system and is updated at least every four years. The update is an opportunity to review and update transportation priorities within the region. The Regional Transportation Plan is required to forecast the transportation needs of the region for the next twenty-five years (the year 2040 for this plan) and it is required to do so in the context of financial constraint. This Plan also establishes performance measures so that future progress in meeting the region’s goals can be assessed.

The recommendations in the Franklin Regional Transportation Plan provide the framework for transportation projects in the county. It is from this Plan that projects are chosen to be designed, funded, and implemented. Historically, the region has been very successful with the rate at which the RTP’s recommendations have been implemented. Table 1-1 shows that out of the twenty recommendations from the previous 2012 Regional Transportation Plan, seven have already been completed and another six are in progress or are nearly completed.

	Recommendation	Status	Notes
1	Initiate Passenger Rail service from New Haven, CT to St. Albans, VT with a stop in Greenfield	Completed	
2	Construct a Park-and-Ride Lot near I-91 exit 24 in Whatley	Completed	
3	Acquire Scenic Easements along Designated Scenic Byways	Completed / Ongoing	
4	Realign I-91 Northbound Exit 24 Ramp Realignment	Completed	
5	Construct improvements to better accommodate slow-moving vehicles on Rt. 2/Greenfield Mountain	Completed	
6	Replace retaining walls on Route 116 along the South River.	Completed	
7	Create additional Park & Ride lots throughout the County.	Completed / Ongoing	
8	Construct Route 2 West Safety Improvements including protected turn lanes at Colrain-Shelburne Road and South Maple Street in Shelburne, and Traffic Calming in Charlemont Village Center	In Progress	Charlemont Village Ctr Traffic Calming is in design. A study was conducted at Colrain-Shelburne Rd and improvement is in design.
9	Reconstruct Rt. 2 in Charlemont, including several culverts	In Progress	Design is underway and waiting funding.
10	Expand Bus Service throughout the county	In Progress	A comprehensive service analysis is underway to evaluate ways to improve service.
11	Increase frequency & extend bus service hours during evenings and weekends.	In Progress	A comprehensive service analysis is underway to evaluate ways to improve service.
12	Advance Route 2 Safety Improvements in Ervingside, Farley, Erving Center, and Gill/Greenfield	In Progress	Improvements have been completed in Ervingside and Farley and under design for Gill/Greenfield, Erving Center, and Erving.
13	Implement Safety and Traffic Flow Improvements along Route 2 between the I-91/Route 2 Rotary and Home Depot in Greenfield	In Progress	A Road Safety Audit was completed and resulted in additional recommendations.
14	Plan for Passenger Rail from Franklin County to Boston	Preliminary Planning Phase	Monitoring of rail planning efforts is ongoing.
15	Rehabilitate the General Pierce Bridge	Preliminary Planning Phase	Rehab of the Gill-Montague Bridge must be completed first, which is now done.
16	Create a parking garage near the Regional Transit Center to facilitate regional commuting and downtown revitalization.	Preliminary Planning Phase	Existing vacant building on site has been scheduled to be demolished.
17	Construct a Bikeway to connect the downtowns of Orange and Athol	Preliminary Planning Phase	Preliminary feasibility studies have been completed.
18	Construct a sidewalk to Mohawk Trail Regional High School along Rt. 112 and North St.	Preliminary Planning Phase	MassDOT & Buckland agreed to shoulder widening instead of sidewalk construction (due to snow clearing issues).
19	Create an Erving-Wendell Bike Path to connect Erving Center with Farley and Ervingside	Preliminary Planning Phase	A feasibility study was completed in 2012. Private property issues that will need further investigation.
20	Promote ridesharing in the region	Not yet started	

*Projects are not listed in any order of priority. Status as of January 2015.

Franklin County Massachusetts

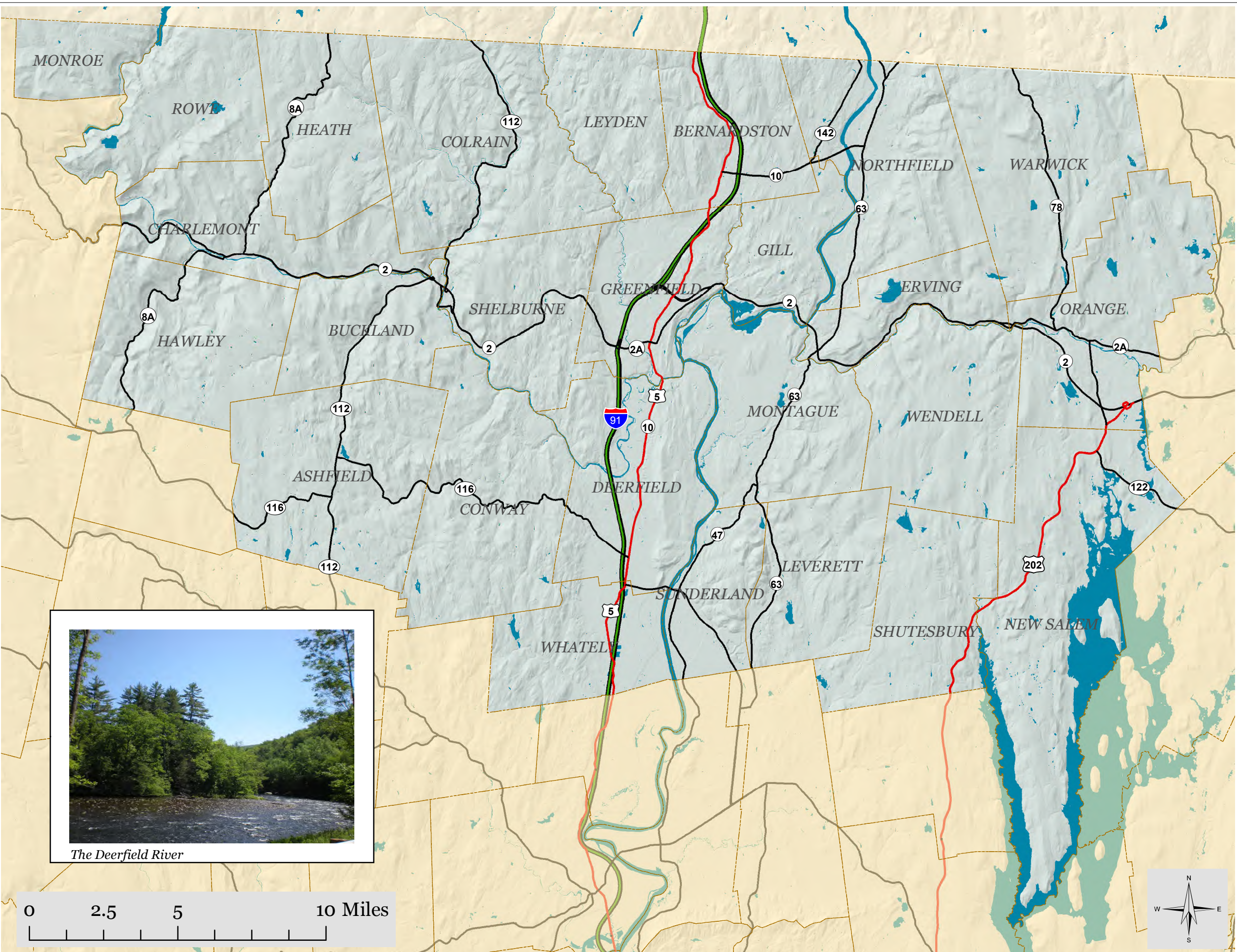
Town	Area (sq mi)	Public Road Mileage
Ashfield	40.3	83.19
Bernardston	23.41	58.07
Buckland	19.56	50.5
Charlemont	26.1	57.55
Colrain	43.38	86.32
Conway	37.71	70.96
Deerfield	32.29	100.13
Erving	13.87	43.56
Gill	13.98	43.65
Greenfield	21.73	132.35
Hawley	30.86	48.53
Heath	24.9	59.53
Leverett	22.85	43.01
Leyden	17.99	38.08
Monroe	10.71	18.39
Montague	30.4	114.31
New Salem	44.98	103.79
Northfield	34.41	83.73
Orange	35.36	103.53
Rowe	23.55	36.24
Shelburne	23.25	59.18
Shutesbury	26.61	41.95
Sunderland	14.39	46.31
Warwick	37.27	64.49
Wendell	31.99	66.47
Whately	20.18	48.27

Data Source:

Massachusetts Municipal Association



Sources: Map produced by the Franklin Regional Council of Governments Planning Department.
GIS data sources include MassDOT, MassGIS and FRCOG.
Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



The Deerfield River

2

Public Participation & Title VI Activities



2016 Regional Transportation Plan

2 Public Participation Process

Federal transportation legislation requires that each metropolitan planning organization prepare a transportation plan every four years. The legislation also mandates that an inclusive participation process be completed as part of the plan's development. The latest iteration of the federal transportation legislation, MAP-21, has placed particular emphasis on the public participation process. Specifically, it calls for increased interagency consultation, the use of visualization techniques in the public participation process, and outreach to organizations and groups that are impacted by transportation issues. Attention was particularly paid to population classes protected by federal Title VI requirements (part of the Civil Rights Act of 1964). These groups include: race, color, national origin, age, sex, and disability. This chapter describes the public participation process that the FRCOG and the FCTPO used in the development of this RTP.

The Franklin County Transportation Planning Organization and the FRCOG's Continuing, Cooperative, and Comprehensive (3C) Transportation Planning Process

The Franklin Regional Council of Governments receives federal funds to conduct regional transportation planning on behalf of the Franklin County Transportation Planning Organization (FCTPO) and is therefore required by law to carry out a continuing, cooperative, and comprehensive (3C) transportation planning process. This process depends on significant public involvement, and requires that all plans and programs consider all modes of transportation and support community development and social goals. The FCTPO is responsible for monitoring the progress of the regional transportation planning processes and making the final decision regarding any regionally significant projects to be included in the Regional Transportation Plan.

Public Participation Requirements of MAP-21

MAP-21 requires that the Regional Transportation Plan be developed in consultation with the State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. The legislation further states that consultations with these agencies should take into account plans, maps, and inventories of natural and/or historic resources as available and applicable. In addition, MAP-21 states that the planning process used by the metropolitan planning organization (MPO) should serve to promote consistency between transportation improvements and State and local planned growth and economic development patterns.

The legislation, MAP-21, notes that the public participation process associated with the development of the plan shall be developed in consultation with all interested parties and allow all interested parties a reasonable opportunity to comment on the contents of the transportation plan, and to the maximum extent practical, should include the following as a part of that task:

- Hold any public meetings at convenient and accessible locations and times;
- Employ visualization techniques to describe the transportation plan;
- Make public information available in electronically accessible format and means, such as the World Wide Web, as appropriate to afford reasonable opportunity for consideration of public information.

Public Outreach and Input during the Development of the Regional Transportation Plan

Public input is an essential component in the creation of the Franklin County Regional Transportation Plan. The input FRCOG received as part of its outreach efforts helped shape and inform the RTP's goals and recommendations. The RTP



Public outreach during the 2014 Parking Day in Greenfield

is a public document that was reviewed by all levels of government including: the FCTPO; the Franklin Regional Planning Board (FRPB); the local communities; representatives of regional, state, and federal agencies; and organizations and members of the public representing a wide array of interests. This section describes the public outreach and participation efforts conducted by the FRCOG staff.

Initial Public Outreach

At the beginning of the update process for the Regional Transportation Plan, the FRCOG developed a public participation strategy that sought to obtain public input from as many and diverse populations as possible. The strategy included hosting public forums, distributing a survey, and attending many stakeholder meetings. Two public forums were held between January and February of 2015. They were held at various times to facilitate

attendance in the central location of Greenfield at the ADA accessible John W. Olver Transit Center. In addition to these two public forums, the FRCOG also held a public meeting with municipal officials during the day to gather input specifically from the municipal perspective. To further ensure that as many stakeholders as possible were provided the opportunity to comment on transportation in Franklin County, FRCOG staff also attended many meetings of various organizations throughout the region and made presentations regarding the update process and asked for project ideas and feedback. In addition, the FRCOG staff discussed the plan informally when meeting with town boards and local and regional organizations to solicit further input regarding the update or ideas for transportation projects in the county. The details for all of these meetings can be seen in Table 2-1.

At all of the public forums the update process was explained, examples of past Regional Transportation Plans were provided, and visual aids (PowerPoint presentation, pictures, and maps) were used to augment the discussion. The forums were announced several weeks prior with ads placed in all of the local newspapers, the FRCOG website, Facebook page, and Twitter feed. Public television ads were recorded and aired prior to the forums. In addition, personal invitations were sent to a wide array of stakeholders announcing the Regional Transportation Plan update and the dates of the forums (see Appendix A for a list of stakeholders that were contacted and for a summary of the public input that was received).

To augment the input received from the public forums, the FRCOG also created a survey about transportation issues within the county. The survey was geared towards a general audience and can be viewed, along with the results, in Appendix C. The survey was available both in an online format and in hardcopy. The general survey that the FRCOG distributed looked to capture several specific pieces of information. Namely, survey respondents were asked: to rate the state of the existing transportation infrastructure; to describe their current daily travel modes and routines; and what their top three recommendations and priorities would be for transportation improvements in the region. The FRCOG received 52 completed surveys from county residents and used the information provided in the surveys to help inform this RTP.

During the update of this Regional Transportation Plan, draft chapters were made available for review on the FRCOG website (www.frcog.org). In addition, information regarding the update was regularly posted on FRCOG's social media, including Facebook and Twitter.

Final Public Outreach and Approval Process

Once the FRCOG staff had completed a draft of the 2016 Regional Transportation Plan, public input was sought from a variety of stakeholders as well as those required by MAP-21

during a 30-day public review and comment period between June 25 and July 24, 2015. The draft RTP was made available for public review through a variety of means, including: press releases and legal notices to local media, mailings to stakeholders and interested individuals/ agencies/ organizations, notices on the FRCOG Facebook and Twitter accounts, and posting of the draft on the FRCOG website. In addition, two public meeting were held on July 15, 2015 in the centralized location of Greenfield to directly obtain public input regarding the draft RTP. One meeting was held at 11:30am to coincide with bus schedules and the other meeting was held at 5:30pm to allow people working during the day to attend the meeting. Visual aids, such as a PowerPoint presentation, maps, and photographs were used during this meeting to help attendees visualize the RTP and its recommendations.

As part of this outreach, the FRCOG received several comments on the draft RTP. Those comments that were received were reviewed and incorporated, as appropriate, into the RTP during its preparation (all comments received can be seen in Appendix B). Following the official FCTPO Public Participation Plan's requirements of a minimum thirty-day review period, the FCTPO endorsed the 2016 Regional Transportation Plan by vote, following an official report and discussion, at a meeting open to the public at large.

Environmental Justice and Title VI

In 1994, a Presidential Executive Order directed every federal agency to make Environmental Justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on “minority populations and low-income populations.” The U.S. Department of Transportation has addressed this directive by involving the potentially affected public in developing transportation projects that fit harmoniously within their communities without sacrificing safety and mobility. This initiative recognizes that effective transportation decision-making depends upon understanding and properly addressing the unique needs of different socioeconomic groups. Title VI is a section of the Civil Rights Act of 1964 prohibiting discrimination based on race, color, national origin (including limited English proficiency), age, sex, and disability. All federally-financed programs must ensure that all people be able to participate fully in the public participation process.

The Franklin Regional Transportation Plan has identified a number of goals in support of Environmental Justice and Title VI. There is a commitment that planning and programming within the region be nondiscriminatory and that all segments of the Franklin County population are able to participate fully in regional transportation planning processes and to access transportation facilities and services.

Beginning in 2001, the Franklin Unified Planning Work Program (UPWP) has had a specific task for Environmental Justice and Title VI-related activities. The work under this task has focused on the following:

- Analyzing and mapping U.S. Census Bureau data on income and race in order to identify Environmental Justice target areas that have the greatest concentration of minority populations and residents living below the poverty level;
- Conducting an Equity Analysis based on the recommended projects in the RTP and approved projects in the TIP. This analysis was updated for this RTP. Reviewing current transit routes and the level of service for the Franklin County region, especially in the identified Environmental Justice target areas, and working with the regional transit agencies to find ways to maintain and improve transportation services in the region, as funding allows;
- Conducting outreach to low-income and minority populations and community organizations to identify unmet transportation needs among these groups and develop strategies for addressing them; and
- Reviewing and strengthening current transportation planning and decision-making processes to increase the representation of low-income and minority residents.

For this update to the RTP, FRCOG staff used 2009-2013 Five Year Estimates from the U.S. Census data to identify 18 Environmental Justice areas.¹ They are listed in the following Table 2-1. After identifying the Environmental Justice areas, staff conducted a review of approved projects in the TIP and recommended projects from the previous 2012 RTP in order to determine if the Environmental Justice areas receive an equitable distribution of transportation funding compared to the region as a whole. It was determined that in many aspects, the populations within the Environmental Justice areas are better served by the existing transit system than Franklin County residents as a whole and that 78 percent of highway project spending and 58 percent of highway projects occur in the EJ areas.² The results of this analysis are summarized in FRCOG's *2015 Regional Transportation Equity Analysis* (completed in July 2015).

The Environmental Justice (EJ) areas have been the focus of the FCTPO's EJ initiatives and the FCTPO has worked to increase representation of these EJ populations in the public

¹ EJ Areas are defined as blockgroups where minorities comprise at least 9% of the population and at least 12% of the population is below the poverty level.

² The very large percentage of highway spending inside the EJ areas can be attributed to several large projects, primarily the rehabilitation of the Gill-Montague Bridge, which has a cost of \$40.7 million.

participation and transportation planning processes. In addition, the FRCOG has also worked to increase its outreach and representation of Title VI/Nondiscrimination populations. The primary method that has been used to contact these populations has been through outreach to social service agencies and organizations that serve Franklin County. Just recently, the FRCOG transportation staff was invited to participate in the Franklin County Resource Network (FCRN), which is a large network of social service providers who serve a range of populations throughout Franklin County and the larger region. The FRCOG staff is successfully continuing to work steadily to make new contacts that reach underrepresented populations.

Table 2-1: Environmental Justice Areas in Franklin County

Environmental Justice Area 2015	Which Criteria Met?	
	Poverty Criteria	Minority Criteria
Colrain, eastern portion		X
Deerfield, northern portion		X
Erving, western portion		X
Gill, entire town		X
Greenfield, Cheapside area		X
Greenfield, town center and surrounding areas	X	X
Greenfield, west of I-91/Leyden Woods	X	X
Monroe/Rowe/Charlemont	X	
Montague, Millers Falls	X	
Montague, non-urban area		X
Montague, Turners Falls	X	X
Northfield, northern portion	X	
Orange, town center and surrounding areas	X	
Shelburne, Shelburne Falls	X	
Shutesbury/Leverett		X
Sunderland, entire town		X
Warwick/east Erving	X	
Wendell, entire town	X	X

Access to Essential Services

The FRCOG is aware of the critical role of transportation in community access to essential services. The FRCOG staff is currently working on a project focusing on the health impacts of transportation access region wide. The study is looking at access by various modes of transportation, including fixed route transit services, bicycle, and pedestrian facilities. This project applies a “health lens” by creating and examining travel scenarios for different sectors of the population across the region in order to understand how increased transportation options can improve health outcomes. The scenarios will look at travel options for getting to specific destinations/services such as: grocery stores, sources of fresh foods, health care facilities, and recreational facilities. This analysis will identify potential transportation improvement projects and gaps in regional transportation services. This work will be completed shortly by June 30, 2015.

Consideration of Environmental and Land Use Issues

During the update to the 2016 Regional Transportation Plan, the FRCOG considered a wide range of issues and incorporated these factors throughout the RTP and its recommendations. These issues included: environmental, land use, historic preservation issues, and local and regional priorities and concerns. To ensure that the draft RTP is compatible with other land use/resource protection plans, the FRCOG contacted representatives of state and local agencies responsible for land use management, historic and natural resources, and environmental protection with the goal of having a meeting to discuss the draft RTP. These representatives included: regional land conservation trusts, the Massachusetts Historic Commission, the MA DEP, MA DCR, MA EOEEA, and others. Unfortunately, due to scheduling conflicts and winter weather this meeting could not be held. However, FRCOG staff sought input from these representatives outside of a formal gathering and included the information received in the drafting of the RTP.

In addition, when preparing the RTP the FRCOG considered land use and environmental issues and the consistency between transportation planning and other planning activities, through its dual role as the staff for the Transportation Planning Organization (TPO) and as the Regional Planning Agency (RPA) for the Franklin County region. As the RPA for the Franklin County, the FRCOG has statutory responsibility for the coordinated and orderly development of the region, including regional growth planning and transportation planning. The RPA staff overlaps with the TPO staff, with most FRCOG transportation staff involved in planning activities beyond transportation. The RPA works with towns, regional organizations, and State agencies on land use, open space, and natural resource planning, and assists towns with zoning revisions and redevelopment projects. For example, the FRCOG has been the lead consultant for Community Development Plans for fourteen of the twenty-six towns in Franklin County and assisted with seven other towns in the county. The FRCOG has also worked on a number of municipal Master Plans, Open Space and Recreation Plans, watershed assessment plans, scenic byway corridor management plans, regional economic development plans, among others. The FRCOG has also assisted a number of towns with zoning revisions to support smart growth development patterns. In 2013, the FRCOG completed *Sustainable Franklin County: A Regional Plan for Sustainable Development*. Through an intensive public outreach effort, this plan identified proposed Priority Development Areas and Emerging Development Areas for Franklin County.

Critical Linkages

A new tool has been developed through a collaboration between the Nature Conservancy, UMass Amherst, and MassDOT to model the impacts on habitat connections from transportation and development projects. This model identifies critical habitat linkages in

the Commonwealth and can be used by planners and local communities to see how a specific transportation project, such as a culvert or guardrail replacement, could potentially impact forest and river habitat. The FRCOG staff is currently updating a bridge and culvert inventory for Franklin County. This inventory will combine the information from the Critical Linkages model so that the towns will have a better understanding of how their local infrastructure could impact the environment and mitigate potential harmful effects.

Interagency Consultation

Coordination with Local Agencies

The FRCOG provides technical assistance to the Franklin County towns and works as partners with many local organizations and agencies. This work ranges from performing traffic counts, to identifying and preparing local grant applications, to creating a wide assortment of planning documents. The local agencies and committees that were consulted in the update of this Plan include:

- All twenty-six municipalities in Franklin County
- Franklin Regional Transit Authority
- Franklin Regional Housing and Redevelopment Authority
- Mount Grace Land Conservation Trust
- Franklin Land Trust
- Franklin County Community Development Corporation
- Franklin County Resource Network
- Franklin County Home Care Corporation
- Councils on Aging
- Community Action
- Franklin County Chamber of Commerce
- Greenfield Community College
- Franklin Regional Planning Board

Coordination with State and Federal Agencies

As part of its routine work, the FRCOG also works with a number of state and federal agencies. This is especially true since the vast majority of Franklin County's transportation (and other) projects are funded by the state and federal government. The state and federal agencies that were consulted in the update of this RTP include:

- Massachusetts Department of Conservation and Recreation (DCR)
- Massachusetts Historical Commission
- MassDOT, Highway District 1 and 2 and Office of Transportation Planning

- MassDOT Rail Division and MassDOT Transit Division
- Massachusetts Department of Housing and Community Development (DHCD)
- Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA)
- Massachusetts Department of Environmental Protection (DEP)
- Massachusetts Housing Partnership (MHP)
- Federal Highway Administration (FHWA)

Coordination with Other Local MPOs

In addition to coordinating transportation planning with local and state agencies, the FRCOG also works closely with its neighboring MPOs. It has a long standing relationship with the other western Massachusetts MPOs of the Berkshire Regional Planning Commission (BRPC) and the Pioneer Valley Planning Commission (PVPC). Recently, the FRCOG has also begun working more closely with its Vermont and New Hampshire counterparts, specifically the Southwestern Regional Planning Commission (SWRPC) and the Windham Regional Commission (WRC). The FRCOG has partnered with all of these MPOs on many cross-regional contracts, but particularly on Scenic Byway projects. In November of 2014, the SWRPC, WRC, and the FRCOG met to discuss many tristate issues, including transportation.



Participants at the 2015 Bike Breakfast at the John W. Olver Transit Center

Table 2-1: RTP Public Participation Outreach Schedule

Date	Type of Meeting	Audience	Location
May 12, 2014	FRTA Community Conversation on Transit	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Turners Falls
May 14, 2014	FRTA Community Conversation	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Greenfield
May 19, 2014	FRTA Community Conversation	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Shelburne
May 20, 2014	FRTA Community Conversation	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Orange
August 26, 2014	FRTA Community Conversation	The Franklin Regional Transit Authority (FRTA) and members of the public and representatives with an interest in transit issues.	Greenfield (Farmer's Market)
September 4, 2014	Franklin County Energy Committees	Attendees included: FRTA, members of municipal Energy Committees, Greening Greenfield, and others interested in transit and transportation issues.	Greenfield
September 19, 2010	PARK(ing) Day community event	Attendees included members of the general public, Greening Greenfield, Town of Greenfield Master Plan Implementation Committee, and the Greenfield Business Association.	Greenfield
January 8 2015	FRTA Transit Advisory Committee/ Regional Coordinating Committee	Attendees included: FRTA, members of the FRTA TAC and RCC, MassMobility, Community Action, Montague Catholic Social Ministries, MassRIDES, Transportation Justice for Franklin County, Greenfield Town Council representatives, and members of the public.	Greenfield
January 21, 2015	Franklin County Comprehensive Economic Development Strategy Meeting	CEDS Committee Members (Each town in Franklin County has a town-appointed representative on the Committee. Also serving on the Committee are appointees of the FRCOG Executive Committee, the Franklin County Selectmen's Association, and North Quabbin Chambers of Commerce, the Franklin County Community Development Corporation (CDC), and the FRPB.	Greenfield
January 22, 2015	Franklin Regional Planning Board	Attendees included: Franklin Regional Planning Board members, local officials, and members of the general public	Greenfield
January 27, 2015	RTP Public Forum	Attendees included: municipal representatives and FRTA.	Greenfield
February 4, 2015	RTP Public Forum	Attendees included: FRTA, Transportation Justice for Franklin County, MassDOT, and members of the public with an interest in transportation issues.	Greenfield
February 5, 2015	Franklin County Resource Network	Attendees included: representatives from social service organizations in the greater Franklin County region	Greenfield
February 12, 2015	RTP Public Forum	Attendees included: FRTA, Montague Energy Committee, Greenfield High School, Greenfield DPW, Greenfield Planning Board, MassDOT, Greening Greenfield, Franklin County Home Care Corp., and members of the public with an interest in transportation issues.	Greenfield

3

Goals & Performance Measures



2016 Regional Transportation Plan

3 Transportation Planning Goals and Performance Measures

The most recent federal transportation legislation, MAP-21, requires the establishment of a performance and outcome-based program at the state and metropolitan planning organization (MPO) level. MAP-21 establishes national performance goals in seven areas and the states and MPOs are required to then establish coordinated performance measures that track their progress in these goal areas with tangible targets.

It is important to note that the goals presented in this chapter are the same goals from previous Franklin County RTPs, which have been identified and validated through extensive public outreach. However, to meet the requirements of MAP-21, they have been slightly reorganized or reworded. Only their format has changed, but the substance of the goals remain. The seven MAP-21 goal areas are shown in Table 3-1 below along with the corresponding Franklin County RTP goal.

The new performance measures have been coordinated with *weMove Massachusetts*, the Commonwealth's Long Range Transportation Plan that includes state-level performance measures. Some of these measures have been adapted to the data available for Franklin County and to its more unique rural character.

The recommendations found throughout this RTP all work towards the realization of these goals and performance measures. They will be implemented through coordinated regional planning and, in part, specifically through the Franklin County Transportation Planning Organization's (FCTPO) Transportation Improvement Program (TIP) and its Unified Planning Work Program (UPWP). These shorter-term planning documents reflect the priorities of the Regional Transportation Plan, while guiding how and when projects should be implemented within the financial constraints of anticipated Federal and State Funding. While the FRCOG will continue to strive to meet the goals and performance measures, it should be noted that the implementation of many of the goals are out of its control and depend on federal and state funding and policy decisions.

Table 3-1: Relationship between MAP-21 and RTP Goals

MAP-21 Goal Area	Corresponding FC RTP Goal
Safety	Goal 2
Infrastructure condition	Goal 1
Congestion reduction	Goal 3
System reliability	Goal 3
Freight movement & economic vitality	Goal 4
Environmental sustainability	Goal 5
Reduced project delivery delays	N/A

The Transportation Improvement Program (TIP) is a prioritized, four-year program for the implementation of transportation improvement projects in Franklin County that receive federal funds. It is updated annually and is adjusted to the changing fiscal environment, but always reflects the RTP's goals and priorities. Each potential project considered for inclusion in the TIP is scored using the Transportation Evaluation Criteria (TEC). The TEC rates projects in six criteria categories on a scale of -18 to +18. The categories include: Condition, Mobility, Safety, Community Effects, Land Use & Economic Development, and Environmental Effects. A project's total score relates to the impact it will have in each of the categories. The TEC score, along with project readiness, funding availability, and how well it meets the RTPs goals, are considered in the selection of projects for the TIP in a cooperative process among FRCOG Transportation Planning staff, MassDOT Office of Transportation Planning, and MassDOT Highway Division District 1 and District 2 staff.

The Unified Planning Work Program (UPWP) is also an annual document that describes the work tasks to be conducted during the year by the transportation planning staff of the FRCOG on behalf of the FCTPO. Like the TIP, the UPWP is based upon the priorities that have been identified in the RTP and work towards implementing those goals.



Top priorities for fixed route services compiled from public outreach efforts.

Performance Measures for the Franklin County Regional Transportation Plan

Goal 1: Maintain infrastructure to facilitate the mobility of people and goods traveling to, from, and through Franklin County.

Objective A) Maintain condition of on and off-system bridges

Measure: Reduce the number of bridges that are structurally deficient or functionally obsolete.

Target: Reduce the number of bridges that are structurally deficient or functionally obsolete by 5% over 10 years.

Objective B) Maintain the condition of the region's roadways

Measure: Maintain or improve pavement conditions as measured by FRCOG's Pavement Management System.

Target: Increase percentage of pavement in good or excellent condition by 5% over 10 years.

Objective C) Maintain the region's transit fleet

Measure: Maintain the fixed route and paratransit vehicles in a state of good repair.

Target: Replace vehicles on a FRTA-set replacement schedule.

Goal 2: Improve safety and security of transportation network.

Objective A) Reduce the number of fatal and injury crashes on roadways

Measure: Make safety improvements so that crashes decrease throughout region.

Target: (1) Reduce number of crashes in region by 10% over 10 years.

(2) Reduce proportion of injury & fatal crashes to total crashes by 5% over 10 years.

Objective B) Expand emergency preparedness and training

Measure: Identify transportation infrastructure vulnerabilities and plan for natural disaster and other emergencies.

Target: Continue involvement with the Regional Emergency Preparedness Committee and the Western Regional Homeland Security Advisory Committee.

Objective C) Identify dangerous locations for pedestrians and bicyclists and improve the safety for all users

Measure: Identify potentially dangerous locations and conduct complete streets assessments with safety recommendations.

Target: Conduct 10 complete street site assessments with recommendations by 2020.

Goal 3: Increase transportation options and reduce vehicle emissions.

Objective A) Expand the transit system

Measure: Increase the frequency of fixed routes, expand the hours of service, and increase fixed transit routes.

Target: (1) Increase the frequency of routes to at least average 30 minute headways on Route 21; 60 minute headways on Route 31 & 32; 120 minute headways on Routes 23 & 41.

(2) Add weekend and evening service.

(3) Add routes to currently unserved areas.

Objective B) Expand bicycling and walking network

Measure: Increase the number and safety of bicycling and walking facilities.

Target: Increase share of walkers and bicyclists to 8% in 10 years.

Objective C) Provide alternatives to driving alone

Measure: Increase the use of the park and rides throughout the region and promote the use of ridesharing.

Target: (1) Increase the utilization rates of the park and ride lots by 50% over 10 years.

(2) Increase the share of workers commuting by carpool to 10% in 10 years.

Objective D) Minimize congestion on roadways

Measure: Identify congested roadways and implement improvements.

Target: (1) Meet volume-to-capacity ratio of less than 1.0 ($v/c < 1.0$) on major corridors in 5 years.

(2) Improve level of service (LOS) on major corridors to LOS D or better within 10 years.

Objective E) Increase passenger rail options to serve commuter purposes.

Measure: Establish a passenger rail system between Greenfield and Springfield.

Target: Establish a passenger rail system between Greenfield and Springfield that runs at least 4 times a day.

Goal 4: Promote economic development of the region while maintaining its rural character.

Objective A) Encourage regional tourism

Measure: (1) Promote motorist and bicycling touring in the region.

(2) Preserve natural, scenic, cultural, and historic resources.

(3) Increase access to regional recreational resources.

Target: (1) Launch a bicycle promotional campaign for western Massachusetts by 2020.

(2) Preserve natural, scenic, cultural, & historically significant land along the region's byways.

(3) Identify gaps in access to important regional recreational resources and recommend corrective measures.

Objective B) Ensure that freight movement is efficient and effective

Measure: Improve safety and decrease delay along freight routes.

Target: Improve level of service (LOS) on major freight corridors to LOS D or better within 10 years.

Objective C) Improve transit system to advance workforce development in the region

Measure: Increase the frequency of fixed routes, expand the hours of service, and increase fixed transit routes.

Target: See targets for 2A

Goal 5: Promote sustainable transportation, reduce greenhouse gas emissions, and prepare for climate change.

Objective A) Ensure roadways accommodate all non-motorist users

Measure: Promote adoption and implementation of Complete Streets policies.

Target: 20% of Franklin County towns have adopted Complete Streets policies over next 5 years.

Objective B) Improve transit system

Measure: Increase the frequency of fixed routes, expand the hours of service, and increase fixed transit routes.

Target: See targets for 2A

Objective C) Support sustainable development land use patterns

Measure: Identify transportation projects that support sustainable development.

Target: Add criteria to the TIP Evaluation Criteria that supports sustainable development-friendly projects in 3 years.

Objective D) Minimize potential negative impacts on transportation infrastructure from climate change

Measure: Identify vulnerable roadways/culverts and other transportation infrastructure susceptible to climate change.

Target: Create a list of prioritized projects with improvement schedule in 3 years.

4

Regional Demographic & Economic Profile



2016 Regional Transportation Plan

4 Regional Demographic and Economic Profile

Understanding Franklin County's current and future demographic, socioeconomic, and land use patterns are necessary to effectively plan for the region's transportation needs. Chapter 4 examines in detail the current population and economic conditions of the county in order to determine transportation issues that should be addressed. Chapter 4 also looks to the future and examines projected population and job growth with the intent of anticipating future transportation needs.

Franklin County is the most rural county in Massachusetts. It is located in the northernmost portion of the Connecticut River Valley of western Massachusetts. It borders both Vermont and New Hampshire. Franklin County also borders the Massachusetts counties of Hampshire, Berkshire, and Worcester.

Franklin County has a population of 71,408 and a population density of 98 people per square mile in its 725 square mile area. The majority of the twenty-six towns in the county are very small – averaging approximately 1,400 residents. The largest municipality, and only city, is Greenfield with a population of 17,526 people. Ninety percent of the housing stock in Franklin County is owner-occupied, of which 65 percent is in the form of single-family homes.¹ The landscape in Franklin County is predominately open space, forest, and farmland. The soils in the Connecticut River Valley are ideal for agricultural uses, and consequently, the region has a rich agricultural history.

Regional Demographics

Population

To better assess the transportation needs of the region, it is necessary to understand how the population in Franklin County is changing. Between 1970 and 2000, the county's population grew by 20 percent, an increase of 12,300 people. Much of this growth took place during the 1970's and 1980's. Following the trend of slower growth that began in the 1990's, the county's population remained relatively stable between 2000 and 2013, with a total population of 71,408 in 2013 (a growth rate of -0.2%). Table 4-1 illustrates the more recent population changes in the last thirteen years in Franklin County and surrounding counties.

¹ Unless otherwise noted, all socio-economic demographic data is from the U.S. Census Bureau, American Community Survey, Five-Year Estimates 2009-2013.

The population growth that occurred between 2000 and 2013 took place in towns scattered throughout Franklin County without a very clear geographic pattern. The top five towns which experienced the most growth are: Deerfield, Erving, Orange, New Salem, and Gill.

Table 4-1: Estimated Population for Franklin County and other Western Massachusetts Counties, 2000 to 2013

Geography	2000 Census Population	2013 Census Population	2000-2013	
			Change	Percent Change
Franklin County	71,535	71,408	-127	-0.2%
Berkshire County	134,953	130,545	-4,408	-3.3%
Hampden County	456,617	465,144	8,527	1.9%
Hampshire County	152,251	159,267	7,016	4.6%
Worcester County	750,963	802,688	51,725	6.9%
Massachusetts	6,349,097	6,605,058	255,961	4.0%

Sources: U.S. Census Bureau - 2000 Census of Population & Housing; 2009-2013 American Community Survey, Five-Year Estimates, U.S. Census Bureau.

These towns are primarily located throughout the southeastern quadrant of the region. The majority of the towns that lost population during this time period are located in West County.

Age Distribution of the Population

For transportation planning, it is important to know not only the size of a region's population, but also its composition by age group and how that may change over time. As people age, their use of the transportation network tends to change. For example, the elderly are less likely to drive by themselves and are more likely to use public transit or find other alternatives. In addition, the number of adult workers in a region affects peak traffic volumes as they commute to their workplaces. Like much of the nation, Franklin County is getting older as the "Baby Boomer" generation ages. Half (49%) of the Franklin County population is currently aged 45 and older. Of that, 16 percent is aged 65 and older and a quarter (23%) is aged 25 to 44 years old.

The region is expected to see a significant increase in the number of elderly residents over time. The "Baby Boomer" generation (born 1946 to 1964) has begun reaching 65 years old and will reach 75 years old in 2021. Studies have shown that nationally, over 40 percent of people age 75 and above are either non-drivers or have limited their driving.² As a result, it will be important to provide transportation services, including public transit and paratransit/van services for Franklin County's expanding elderly population.

² Straight, A., *Community Transportation Survey*, America Association of Retired People, 1997.

Other age groups of interest for transportation planning are 25 to 44 years old and 45 to 65 years old. These age groups comprise the bulk of the workforce and typically make their trips to and from work during the peak morning and evening commute hours. In 2013, 88 percent of Franklin County residents commuted to work by car (with 78% driving alone and 8% carpooling), 5 percent walked, and 1 percent took public transportation. Traffic congestion during commuting hours can be addressed in part through provision and promotion of healthy transportation options to single occupancy vehicle travel for work commutes. Options could include the use of park and ride lots for carpooling or transit, ridesharing programs, and bicycle and pedestrian facilities. Congestion can also be influenced through flexible work schedules and through the provision of telecommunications infrastructure that helps support residents who work from their homes. In 2013, approximately 6 percent of Franklin County residents worked at home.

Ethnic and Racial Diversity

Franklin County is the least racially and ethnically diverse county in the Commonwealth. As of 2013, the U.S. Census Bureau shows that approximately 94 percent of the population in the county is White. This is compared to a Massachusetts percentage of 80 percent that is White. The remaining population in Franklin County is split predominately between Black (0.9%) and Asian (1.6%), with a very small percentage (0.2%) that is Native American/Alaska Native. Hispanics make up the largest minority in Franklin County at 3.3 percent.³ The racial and ethnic composition of the population has remained fairly stable since 2000, although the Hispanic population has increased slightly from 2 percent of the total population in 2000.

Population Projections to 2040

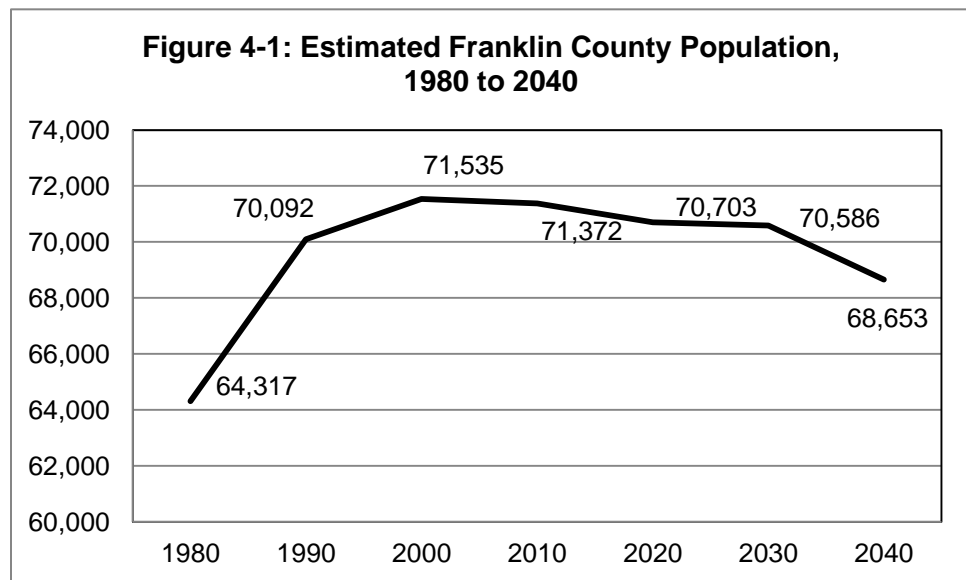
The demographic data presented shows that the Franklin County population size is currently stable, it is gradually getting older, and the ethnic composition is only slightly changing. It is also important to look ahead and forecast how the population may change in the future in order to meet the shifting demands of the region. As part of this effort, MassDOT, in partnership with the UMass Donahue Institute, has developed socio-economic forecasts for all regions of the Commonwealth, including Franklin County, out to the year 2040. Those forecasts have also been applied to the twenty-six municipalities in the county.⁴ In general, the MassDOT forecasts show that the next twenty-five years will be a period of moderate

³ According to U.S. Census definition, Hispanic or Latinos are considered an ethnicity and may be of any race.

⁴ The FRCOG has adjusted the municipal forecasts based on local conditions that the projection methodology does not take into consideration, such as presence of broadband infrastructure or passenger rail.

growth for the Commonwealth as a whole. Massachusetts is projected to grow at 10 percent between 2010 and 2040 with some places increasing more rapidly and some losing population. During this same time, Franklin County is projected to lose 4 percent of its total population, decreasing to 68,653 people by the year 2040. The total population loss for the county over the next twenty-five years will consist of approximately 2,719 people. This loss of population can largely be attributed to the aging of the large Baby Boomer group and fewer births to replace their loss. There is also very little immigration projected to occur in Franklin County to

make up for this population loss, which is the driving force of much of the state's growth. Figure 4-1 shows the projected change in the Franklin County population in relation to the county's past population growth since 1980. The projected population



loss emphasizes the RTP goal of continued maintenance of the transportation system rather than expanding it.

Income and Employment Profile

Income and Wealth

The income levels of a community often indicate the potential transportation needs of a region. Areas with lower-income populations tend to benefit more from the existence of public transportation because the costs associated with using public transportation are less than the costs of owning and maintaining a car. In addition, low income households often do not have the resources needed to cope with rising fuel costs, such as moving closer to work or purchasing a more fuel-efficient vehicle.⁵

In general, U.S. Census data shows that Franklin County's incomes are much lower than Massachusetts as a whole. In 2013, the median household income for the county was

⁵ Cooper, Mark N. "Rising Energy Prices Strain Household Budgets and the Economy For Most Americans," *Consumers Union*. September 2004.

\$53,100, which is much less (24% less) than Massachusetts's median household income of \$66,866. Another income indicator is per capita income. By this measure, Franklin County's income is still 22 percent lower than the Commonwealth's. Franklin County's per capita income is \$29,259, compared to the Massachusetts per capita income of \$35,763. The lower per capita and median income figures for Franklin County in part reflect the lower average salaries and lower costs of living in western Massachusetts compared to Boston and other eastern Massachusetts communities. However, these statistics also reflect economic challenges within the region. These challenges include the loss of a historic manufacturing employment base. As numerous jobs have left Franklin County, they have often not been replaced by comparable employment opportunities with good wages, which have resulted in lower incomes in the region.

According to the U.S. Census Bureau's Small Area Income Estimates Program, Franklin County had an estimated 12.6 percent poverty rate, compared to 11.9 percent for the State in 2013. The areas experiencing high poverty rates include several of the downtowns and village centers that had once been traditional hubs of manufacturing employment, such as Turners Falls (19.9%), downtown Greenfield (15.4%), downtown Orange (12.7%), and Shelburne Falls (9.4%). The small, remote hill towns of Rowe (15.9%), Hawley (13.6%), and Monroe (11.1%) are also impacted by high poverty rates.

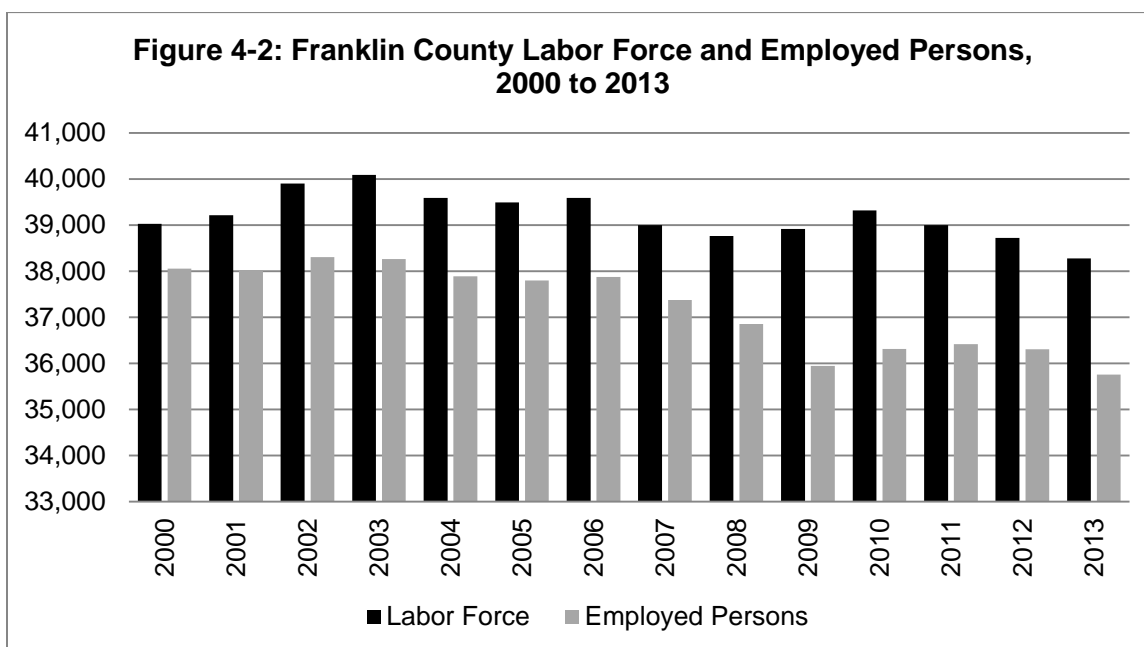
Employment

Regional employment trends reflect both the condition of the national and regional economy and changes in the region's population. When employment opportunities are created in a region, people are likely to move there. Similarly, when jobs in a region are lost, there is typically an out-migration of residents. To understand long-range transportation trends and commuting patterns, it is important to understand the size of an area's labor force and its employment level. An area's labor force is defined as the number of residents age 16 or over who are currently employed or who are searching for work. Unemployment figures describe the percentage of people in the labor force who are not employed (part-time or full-time) during a certain period and who are actively seeking work.

Labor Force

According to the Massachusetts Executive Office of Labor and Workforce Development (EOLWD), Franklin County's labor force has fluctuated over the past fifteen years. The labor force grew throughout the 2000s and then decreased during the recent Great Recession. After 2008, the Franklin County labor force recovered and began to grow again for several years after the Recession. However, since 2010, the labor force has declined back to pre-

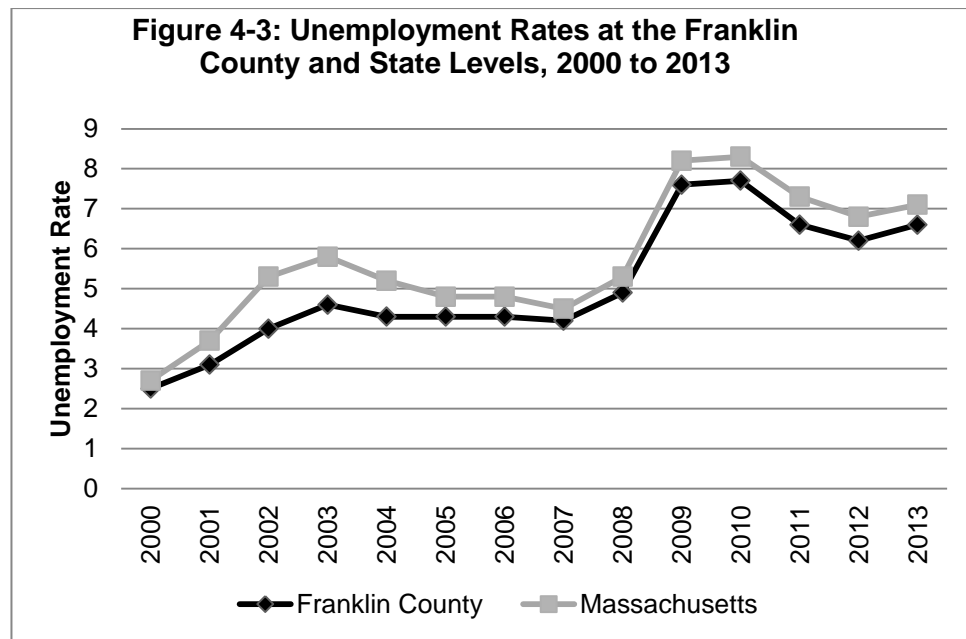
2000 levels. Figure 4-2 shows the changes in the region's labor force and employment levels.



Predictably, the largest town labor forces in Franklin County are located in the most populated communities. Greenfield contains 24 percent of the county's population and accounts for 23 percent of the labor force for Franklin County. Together, the four largest towns (Greenfield, Montague, Orange, and Deerfield) in the region comprise 54 percent of Franklin County's total population and 52 percent of the county's labor force.

In 2013, Franklin County's unemployment rate of 6.6 percent was only slightly lower than the State (7.1%). However, unemployment levels among the individual towns vary greatly. Several towns have consistently experienced high rates of unemployment. According to data from the Massachusetts Department of Labor and Workforce Development for 2013, eight towns in Franklin County had higher unemployment rates than the State rate. The towns with the highest unemployment rates fall into two types of categories: 1) isolated hill towns and 2) downtowns and village centers that had been traditional hubs of manufacturing employment. The towns of Charlemont (7.5%), Wendell (7.4%), Colrain (7.3%), and New Salem (7.1%) have high unemployment rates and are located in the more rural areas of the county. The population centers of Shelburne (9.5%), Orange (9.1%), Montague (7.5%), and Greenfield (7.1%) are also sites of high unemployment. These unemployment figures do not distinguish between full or part-time employment and obscure

the fact that underemployment is a significant problem for the region. Figure 4-3 shows the change in unemployment in Franklin County between the years 2000 to 2013.



Although the unemployed are not commuting to jobs, they are often traveling for employment interviews and training. Unemployed residents can greatly benefit from support services, including transit services, which can help them access, obtain, and keep good jobs. Without adequate public transportation options, it can be difficult for potential workers who do not have the use of a vehicle to access and maintain quality employment. Assisting low-income residents with transportation to work, training, and educational opportunities that can improve their employment options, is a major focus of the transit network in Franklin County and of proposed transit service improvements. Chapter 9, “Transit and Paratransit Services,” describes in detail the transit network and its various services.

The best estimates of self-employed workers in Franklin County are from the U.S. Census Bureau’s data on non-employer businesses, which is reported annually (with a two-year lag time). Non-employer establishments are defined as having no paid employees (other than the self-employed individual), have annual business receipts of \$1,000 or more, and are subject to federal income taxes (thus excluding non-profit organizations). The Census Bureau’s most recent data (2013) estimates that Franklin County has an estimated 6,103 non-employer businesses, which is a slight decrease of 88 businesses since 2008.

Major Employers

There are 33 employers in the region that have at least 100 employees. Most of the major employers are located in the county's primary employment centers, including Deerfield, Greenfield, Orange, and Whately. Yankee Candle, which has its headquarters and a large retail store in Deerfield and manufacturing facility in Whately, is the largest employer in Franklin County with more than 1,000 employees.

It is important to note that many Franklin County residents are employed outside of Franklin County; 33 percent of employed county residents commute to jobs outside of the county, often in nearby communities in Hampshire County, such as Amherst and Northampton. The largest single employer of Franklin County residents is the University of Massachusetts at Amherst. The most recent data available shows that in 2002, UMass Amherst estimated that it employed 1,250 Franklin County residents (not including student employees). UMass Amherst has a total of approximately 5,300 non-student staff and faculty members.

The closure or downsizing of major employers in the region has had a variety of impacts on the regional economy and on residents. These events have had a negative impact on employment levels and incomes, and at times have contributed to the out-migration of the traditional working age populations.

Just to the north of Franklin County, the Vermont Yankee Nuclear Power Station (VY) in Vernon, VT, permanently ceased all operations on December 31, 2014. In 2014, the plant had 550 employees, of which 101 (or 18%) lived in Franklin County. These employees, most requiring very specialized skills to operate and manage the power plant, have relatively high wage and salary levels – much higher than the average regional income. Job levels at the plant will gradually decline as the decommissioning process continues over the next six to seven years. By 2021, it is expected that there will only be 24 employees to manage the site.⁶



A farm stand in Franklin County.

Tourism in Franklin County

One growing sector of the region's economy is the tourism sector. Many of the

⁶ "Economic Impacts of Vermont Yankee Closure," UMass Donahue Institute. December 2014.

communities in Franklin County view tourism as a way to enhance their local economies and support local artisans and craftspeople, and also to promote and protect the region's natural, cultural, and historic resources, including farmland and forestland. More information on tourism in the region can be found in Chapter 11: Scenic Byways and Tourism.

Telecommunications Infrastructure Improvements

An important factor in the region's economy is the availability and efficiency of the telecommunications infrastructure. Telecommunications infrastructure includes systems that provide telephone, television and broadband internet services. In many parts of Franklin County, the services available through the current telecommunications infrastructure are inadequate for present day needs. Issues of reliability, affordability, and access are significant obstacles for small and large businesses, educational and health care institutions, and individuals. Fortunately, a significant project was recently completed that is changing the telecom landscape in the region.

In 2008, Governor Patrick and the state legislature established the Massachusetts Broadband Institute (MBI)⁷ and a \$40 million Incentive Fund to construct the "middle mile" infrastructure that connect unserved areas to the greater global telecommunications network. In 2010, the MBI received a \$45 million federal award, which was combined with over \$26 million in state funding, to construct the *MassBroadband 123* middle-mile network. The first segment of this middle mile network was constructed along the I-91 corridor and in coordination with the Massachusetts Department of Transportation.



Installing broadband conduit along I-91.

Completed in 2014, this network provides the critical connection for 120 cities/towns in western and north-central Massachusetts to the global internet network. In addition, *MassBroadband 123* provides direct connects to over 1,200 community anchor institutions (such as town halls, police departments, schools, and medical centers) to this network.

⁷ More detailed information about the MBI is available on their website at <http://broadband.masstech.org>.

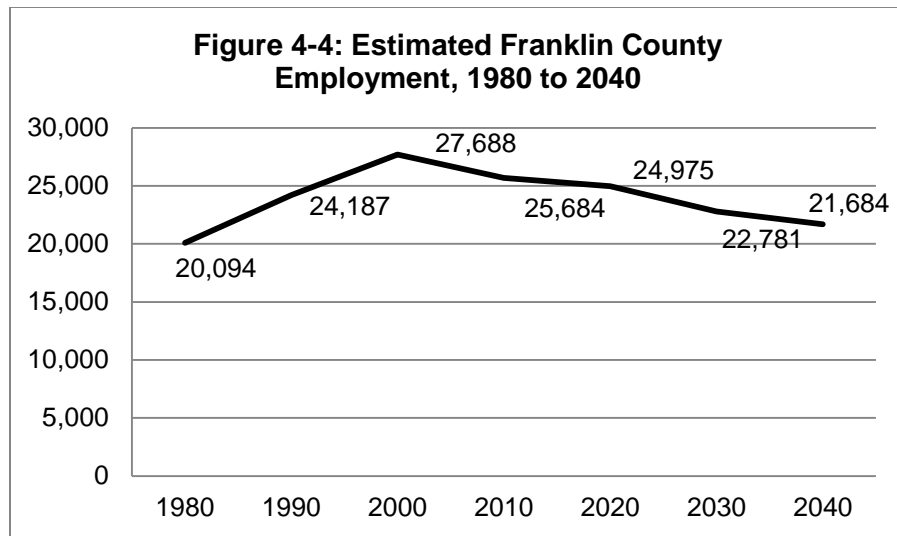
The creation of this middle mile network allows other network builders and service providers to use this network to connect to the “last mile” to serve customers. In the summer of 2014, Gov. Patrick’s administration and with the support of the state legislature included an additional \$50 million in the IT Bond Bill to support last mile infrastructure investment by the MBI in the unserved and underserved communities of western Massachusetts. The MBI is currently working with interested communities to explore how a regional network could be implemented using some of these funds as well as local contributions to be made by the participating municipalities. At the same time, the MBI is working with communities only partially served by cable to determine how this service could be extended to unserved premises. The improved internet service could attract new residents and employment to Franklin County and promote telecommuting – all of which could affect transportation infrastructure needs.

Employment Projections

Employment projections are useful for transportation planning, because they can help estimate future commute travel flows and help assess the need for transportation services and facilities for work-related travel. As with the population forecasts used in this RTP, the employment forecasts were produced by MassDOT, in partnership with the UMass Donahue Institute. The total employment in an area is equal to the number of employed residents in the area, plus the number of non-residents who commute into that area to work. Excluded from the figure are the residents who commute out of the area to work.

MassDOT provided employment forecasts for the regional and municipal level. The municipal level allocations were performed with the assumption that each town’s share of employment will remain constant over the next twenty-five years. This is based on the premise that primary employment trends are regional and the employment centers in Franklin County today will generally continue to be the employment centers in the county for the foreseeable future. While this is true, it is also likely that the communities bordering Hampshire County will most likely become bedroom communities over the next twenty-five years and see an increase in their share of the region’s employment. From an employment perspective, the most important population changes are those that occur at the regional level. Population changes for individual towns, especially smaller towns, have only a minor impact on employment since many workers commute to jobs outside of their community.

As shown in Figure 4-4, the forecasts show that Franklin County’s total employment will decline by 16 percent over the next twenty-five years. The state’s employment is projected to grow by 8 percent over the same time frame. Current employment in Franklin County stands at 25,684 and is projected to lose 4,000 employees by the year 2040.



The forecasts show that Franklin County will lose employment by the year 2040. This is largely due to the graying of the region's population as they age out of the workforce. Other regions in the state with similarly aged populations are also expected to have declining employment. They include Berkshire County and Cape Cod. In terms of planning for the transportation of commuters in the region, these forecasts seem to indicate that the current highway infrastructure is sufficient for commuters' needs. The status of the public transit system should be evaluated to ensure that it is serving the workforce efficiently and effectively. In addition, the return of passenger rail to the region should be evaluated as to how it can best serve the area's labor force as it potentially changes to a more telecommuting/long distance employment model.

Transportation Profile

Because of Franklin County's rural character and limited transit services, the county has a high level of private vehicle ownership and most of Franklin County residents rely heavily on their vehicles for travel.

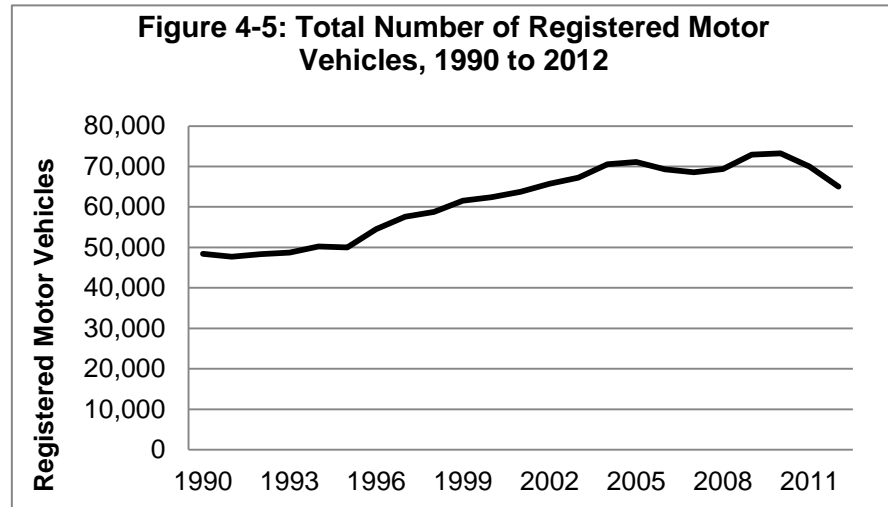
Registered Motor Vehicles

The number of registered motor vehicles has continued to grow in Franklin County at a rate faster than the population – although there have been fluctuations in that growth, which Figure 4-5 illustrates. Between 1990 and 2005, the number of registered vehicles in Franklin County increased 47 percent to a total of 71,106. However, after 2005 the number of vehicles actually declined back to approximately 2000 levels as a result of economic impacts from the Great Recession. Since the economic downturn, the number of vehicles in

the county has fluctuated. In 2013, there were approximately 65,000 total registered vehicles.⁸

Overall, during the sixteen years between 1990 and 2012, the number of registered vehicles grew by 34 percent. At the same

time, Franklin County's population only grew by 1.8 percent. The disproportionate increase in the number of registered vehicles compared to population growth suggests there is increasing motor vehicle usage in the region and a growing dependence on motor vehicles for transportation. This trend is likely to continue despite the small decline and leveling of registered vehicles that occurred from 2005 to 2012.



Households Without Cars

In 2013, 7 percent of Franklin County households (approximately 2,153 households) do not own or have access to a motor vehicle for their transportation needs, compared to 13 percent of households statewide. The Census figures show that the two population groups that are most likely to not own a car are renter households and older households. An estimated 16 percent of renter households in Franklin County have no vehicle available. The higher rate of carlessness among renters is related to two primary factors. First, most of Franklin County's rental housing is located in village and downtown areas that, because of their population density, typically have the highest degree of access to transit services. Secondly, renter households, on average, have lower incomes than homeowners and are more likely not to own a private vehicle because of the costs associated with vehicle ownership. Studies by the Bureau of Transportation Statistics (BTS) and the Surface Transportation Policy Program (STTP) have found that transportation costs are typically the second largest household expense next to housing. Low income households can be particularly burdened by transportation costs, spending a quarter of their income or more, on their travel and private vehicle expenditures. The STTP study found that switching from the use of a private vehicle to transit service can save a family thousand of dollars annually.

⁸ Massachusetts Department of Revenue, Division of Local Services, 2013.

The Census data also show that, by age group, elderly households, especially older elderly, are most likely to not have a car. In Franklin County, 21 percent of households led by householders aged 75 or older are carless. Reasons for the higher level of carless households among the elderly include physical limitations, which make driving difficult, and as discussed above, the expense of private vehicle ownership for elderly fixed-income households.

Commuting Trends

Mode of Transportation to Work

The automobile is the primary mode for commuting travel in Franklin County. In 2013, 87 percent of Franklin County's employed residents commuted to work by car; with 78 percent driving to work alone, and 8 percent carpooling. Town level data is not available, but historically many of those that worked from home lived in the more remote hilltowns of the county.

As mentioned previously, it is anticipated that the employees working from home, also known as telecommuters, will continue to increase in Franklin County in the coming decades. The growth in telecommuting will be driven by the increasing number of technology and information-based jobs that can be conducted from remote locations, such as a workers' home. It will also be driven by the number of people who move to Franklin County, but who choose to keep jobs that are based outside of the region and to which they do not need to commute to every day. Another important factor that will promote telecommuting in the region is the recent and pending expansion of telecommunications infrastructure and high-speed internet services in the region

Commute Patterns

In 2013, approximately 62 percent of Franklin County residents worked in Franklin County and the other 38 percent commuted to jobs outside the county. The majority of residents commuting to work outside Franklin County worked in Hampshire County (20%), though some worked in Worcester County (5%), Hampden County (5%), or Windham County, Vermont (2%).

Due to changes at the U.S. Census, town-level commuting patterns are no longer available. The most recent town-level data that is available for Franklin County residents commuting to jobs outside of Franklin County is the decennial 2000 U.S. Census. This data showed that the two major commuting destinations outside of Franklin County are Amherst and Northampton. According to the 2000 U.S. Census, approximately 3,600 Franklin County residents work in Amherst, and 1,900 Franklin County residents work in Northampton.

While this data is fifteen years old, these two towns remain the largest commuting destinations for Franklin County workers.

Franklin County residents have an average travel time of 24 minutes. The percentage of workers that were commuting longer distances (an hour or more) to their jobs increased between 2000 and 2008. However, since 2008, this percentage has remained the same at 6.3%.

Table 4-2: Franklin County Land Use, 2005

Land Use

The link between land use and transportation is important to consider as new transportation facilities are reviewed or the expansion of old facilities is evaluated. Transportation improvements or expansions, such as adding roadway lanes, upgrading bridges to remove weight restrictions, or establishing and expanding transit services, can themselves promote additional development and influence future development patterns.

Land Use Category	Acreage	% of Total
<i>Undeveloped Land</i>	<i>436,975</i>	<i>94.3%</i>
Forest	357,909	77.2%
Agriculture	36,072	7.8%
Open Land	8,164	1.8%
Recreation	1,716	0.4%
Water/Wetlands	33,111	7.1%
<i>Developed Lands</i>	<i>26,535</i>	<i>5.7%</i>
Residential	18,981	4.1%
Commercial/Industrial	2,178	0.5%
Urban Open*	2,072	0.4%
Transportation	2,167	0.5%
Other Developed Uses**	1,136	0.2%
Total Acreage	463,511	100%

*Urban Open land includes parks, cemeteries, public and institutional buildings, and green spaces. **Other Developed Uses include mining and waste disposal.

Source: MassGIS, 2005.

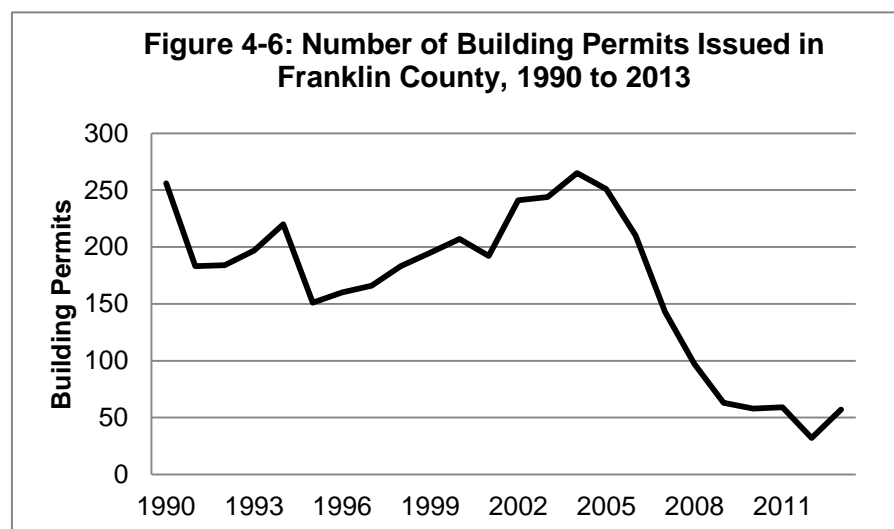
As the state's most rural region, Franklin County has experienced only a limited amount of development. Forestland is still the predominant land use, accounting for more than three-quarters (77%) of the county's acreage, and even the most urbanized towns in the county, such as Greenfield, are at least 45 percent forested. Farmland is the second largest land use, comprising 7.8 percent of the county's total land area. All developed land uses (residential, commercial, etc.) combined account for only 5.7 percent of the county's acreage. These figures are based on MassGIS 2005 mapping of land uses from aerial photographs – the most recent land use data available. The 2005 acreage by land use for Franklin County is shown in Table 4-2.

Although Franklin County is predominately undeveloped, it has experienced substantial growth and development in recent decades. Between 1985 and 1999, the amount of developed land in Franklin County increased 30 percent (7,200 acres). Most of this new

development, almost 6,600 acres, was residential in nature. In Massachusetts, new residential development can occur along road corridors with relative ease, due to the State's Approval-Not-Required (ANR) rules, which allow for the subdivision of land without Planning Board approval, if certain conditions can be met. These conditions are that each subdivided lot must meet minimum road frontage requirements and must have adequate access to protect public safety and welfare. As a result of the expansion in residential acreage from 1985 and 1999, the amount of Franklin County agricultural land decreased by 12 percent and the amount of forestland fell by 2 percent.

MassGIS updated its aerial photography and land use data in 2005. Unfortunately, due to different data collection methodology, the 2005 land use data is not directly comparable to the 1999 land use data. As a result, it is difficult to assess how land uses have changed in the six years between 1999 and 2005. It is very likely that the trend of residential growth continued during that time period based on the increase in building permits. Between 2000 and 2004, the number of new housing units in the region grew by 1,126 or 25 percent. However, growth has dramatically decreased since 2005 due to the effects of the Great Recession. In 2012, there was almost no construction activity with permits issued for a total of only 32 units. This is compared to the 265 permits issued in 2004. There are signs that the construction market is beginning to strengthen in the region and it is likely that development will pick up in the next several years – particularly as more communities gain access to broadband service. Figure 4-6 shows the change in building permit activity in Franklin County between 1990 and 2013.

Almost all of the housing units that have been developed since 2000 were single-family homes built along existing roadways, such as on ANR lots. There are currently very few subdivisions being built in the region. However, as growth in the region



continues and there is less land along existing frontage available for development, it is anticipated that more subdivisions will be constructed. These subdivisions will include new roadways to serve the new homes. These roadways will need to be maintained as either private roads by the developer and property owners, or as public roads by the communities

in which they are located. The impact of the subdivision roads on existing roadway infrastructure will also need to be assessed.

In response to development pressures and concerns about their ability to handle future potential growth, a number of Franklin County communities have recently revised their zoning bylaws to direct growth to areas within their towns with the highest current levels of development and the best infrastructure (water, sewer, roadways) to accommodate new growth. Towns have also worked to encourage other areas to remain undeveloped farmland and forestland. Land conservation organizations in the region, such as the Franklin County Land Trust and the Mount Grace Land Conservation Trust, have protected a considerable amount of private farm and forestland in the region through purchases of land and the purchases of development rights for other land parcels. As of January 2015, 33 percent of the total acreage of Franklin County has been protected from development (MassGIS).

Summary of Demographics and Socioeconomic Trends

The following are key demographic and socioeconomic trends that have significant implications for the transportation system and transportation planning within the region:

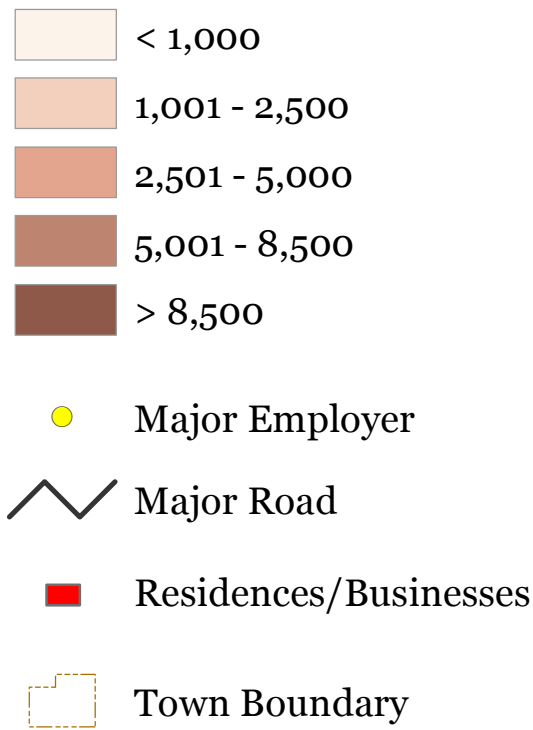
- Population size has remained relatively stable and is projected to decline slightly.
- There has been and will continue to be a high growth in the number of elderly residents.
- Labor force in the region has declined since 2008.
- There will be a growing number of telecommuters/long distance commuters.
- Employment projections show that employment in Franklin County will decline over the next twenty-five years.
- The pace of new construction has been very slow and may increase in the future, but will likely not be significant.



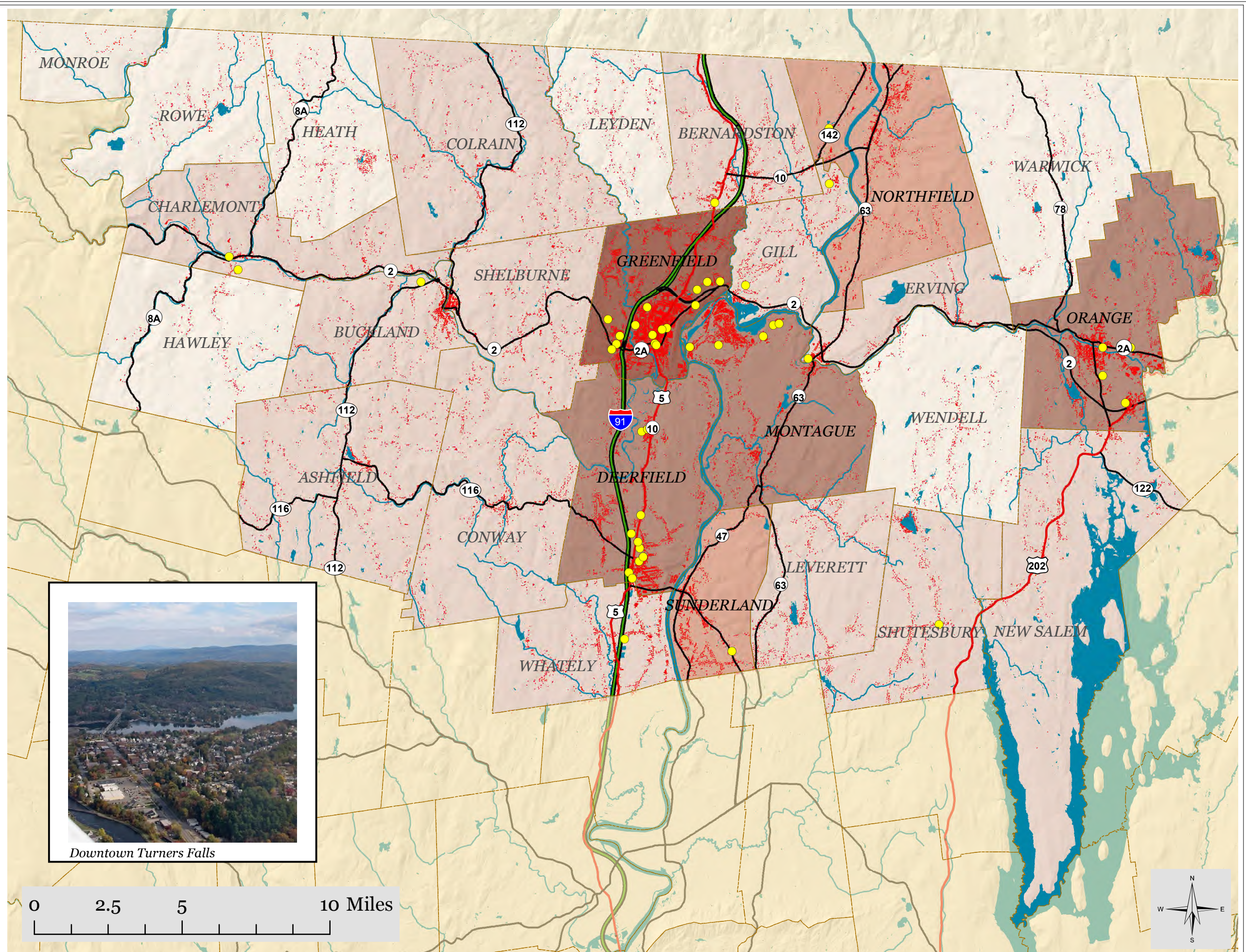
Official opening of the reconstructed Eunice Williams Covered Bridge in Greenfield.

Franklin County Massachusetts

US Census Population 2013



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



5

Road and Bridge Infrastructure



2016 Regional Transportation Plan

5 Roadway and Bridge Infrastructure

Franklin County has a diverse collection of transportation resources, including scenic roadways and covered bridges. A safe and efficient transportation network depends on the quality and integrity of the transportation infrastructure in the county, including roads and bridges. This chapter examines the condition of these road and bridge resources and includes an analysis of the roadway network (mileage and functional classification), traffic volumes, bridge ratings, pavement management analysis, congestion and traffic operations. The goal of this chapter is to identify existing concerns and future needs based on this analysis and public input received during the development of this plan.

Existing Conditions

Franklin County consists of over 1,700 centerline miles. The majority of these miles, 79 percent, are maintained by the Towns, while MassDOT owns and maintains 11 percent of the roads. The remaining 10 percent of the roads are owned by various other entities or classified as unaccepted. Table 5-1 details the breakdown of roadway jurisdiction within each of the municipalities.

Table 5-1: Roadway Centerline Mileage by Functional Class

Functional Classification	Total Centerline Mileage	Percentage of Total
Urban Interstate	8.9	0.52%
Rural Interstate	14.9	0.87%
Urban Principal Arterial	37.8	2.22%
Rural Principal Arterial	29.4	1.73%
Urban Minor Arterial	55.0	3.23%
Rural Minor Arterial	53.5	3.14%
Rural Major Collector	219.3	12.87%
Urban Collector	28.8	1.69%
Rural Minor Collector	113.2	6.65%
Rural Local Road	955.4	56.07%
Urban Local Road	187.3	11.00%
Total	1703.9	100%

Source: Massachusetts Department of Transportation, Road Inventory Year-End Report and Road Inventory File, 2013.

Functional Classification

Functional classification is the categorization of highways and roadways in terms of the service that the roads provide within the regional network. Additionally, functional class has both rural and urban designations based on the U.S. Census population figures. The urban boundaries are based on population figures available from the 2010 U.S. Census. All the urban areas in Franklin County are defined as large urban clusters (Census block groups with a population density of 5,000 to 50,000).

Table 5-2: Roadway Centerline Mileage by Maintenance Authority

Town	Maintenance Authority							Town Totals
	MassDOT	Town	State Forest or Park	DCR*	State Institutional	State College	Un-accepted**	
Ashfield	10.9	71.5	0.3	0	0	0	0.3	83.1
Bernardston	16.8	41.9	0	0	0	0	0.2	59.0
Buckland	6.0	43.1	0	0	0	0	1.1	50.3
Charlemont	12.0	42.7	1.6	0	0	0	0.4	56.8
Colrain	4.0	78.7	1.1	0	0	0	4.1	88.0
Conway	6.5	64.3	0	0	0	0	0.3	71.1
Deerfield	20.4	77.7	1.1	0	0	0	1.3	100.6
Erving	13.5	17.3	6.2	0	0	0	1.1	38.3
Gill	3.9	34.6	0.1	0	0	0	1.9	40.6
Greenfield	21.5	102.1	0	0	0.6	1.5	9.3	135.2
Hawley	0	44.8	3.4	0	0	0	0.2	48.5
Heath	0	52.2	1.5	0	0	0	5.8	59.5
Leverett	5.4	34.6	0	0	0	0	3.1	43.1
Leyden	0	35.5	0	0	0	0	2.5	38.1
Monroe	0	16.7	1.6	0	0	0	0.0	18.4
Montague	5.7	103.6	0.5	0	0	0	3.5	113.4
New Salem	11.9	35.7	0.2	53.8	0	0	2.2	103.9
Northfield	11.1	65.8	0.0	0	0	0	6.9	84.0
Orange	15.6	87.2	0.5	0	0	0	3.5	106.9
Rowe	0	36.0	0	0	0	0	0.3	36.4
Shelburne	9.3	49.8	0	0	0	0	0.08	59.2
Shutesbury	3.1	30.8	0	5.1	0	0	2.6	41.7
Sunderland	4.3	39.0	2.9	0	0	0	0.0	46.3
Warwick	0.01	56.0	6.6	0	0	0	1.6	64.3
Wendell	0.3	46.4	16.7	2.0	0	0	1.2	66.7
Whately	9.8	31.2	0	0	0	0	8.4	49.5
TOTAL	192.8	1340.1	45.0	61.0	0.6	1.5	62.7	1703.9

Centerline Miles refer to the linear length of a road segment. For divided highways, only the length of one side of the roadway has been counted. Source: MassDOT, Road Inventory Year-End Report 2013.

*Department of Conservation and Recreation. State parks and forests are also under the jurisdiction of DCR.

**Unaccepted Roadways consist of roads open to public travel but not formally accepted by a city or town, as well as some private ways.

The majority of roadway mileage in Franklin County, 81 percent, is categorized as rural, with the remaining 19 percent defined as urban. The breakdown of road miles in Franklin County according to functional classification is summarized in Table 5-2. A map of the roadways in the county, along with the functional classification of each roadway is located at the end of this chapter.

Funds are available for improvements and maintenance based on roadway functional classification. All interstates and arterials are eligible for federal funds; all urban collectors and rural major collectors are also eligible; rural minor collectors and local roads are not eligible for federal funds. Approximately 26 percent of the roads in Franklin County's road network are eligible for federal funds per roadway functional classification. The remaining 74 percent of the county's roads are rural minor collectors or local roads and depend on local funds and Chapter 90 funding from the State for improvements and maintenance.

Traffic Volumes and Growth Trends

In Franklin County, traffic volume data has been collected at almost 800 different locations since 1991, the majority of which have been collected by the FRCOG and MassDOT. The FRCOG maintains a database of this traffic volume data and makes it available online through MassDOT's Transportation Data Management System.

Traffic volumes on Franklin County's roadways vary from over 25,000 vehicles per day on sections of Interstate 91 to less than 100 vehicles per day on a number of local roadways. The most heavily traveled roadway in Franklin County is Interstate 91 where Average Annual Daily Traffic (AADT) volumes range from approximately 32,000 vehicles per day in Whately to less than 18,000 vehicles per day through Bernardston. Along Route 2, AADT volumes vary between 17,000 vehicles per day near the Greenfield Rotary to less than 1,300 vehicles per day through parts of Charlemont. Other high volume corridors include Route 116 in Sunderland and Route 5/10 in Whately, with traffic volumes near 15,000 vehicles per day.

Using a sampling of data collected between 2011 and 2014 at 20 locations throughout the county, annual traffic growth was examined and an average growth rate (AGR) for traffic was estimated. There was significant variation in volume growth by location, with some locations showing increased traffic and some showing reduction in traffic volume over the same 4 year period. The overall AGR for the sample showed a decrease in traffic volume of 2.7 percent.

Bridges

Bridges are a critical component of the Franklin County roadway network. Maintaining the safety and functionality of bridges in Franklin County is a top priority. The majority of bridges

located on high volume roadways are predominantly under the domain of the State and are inspected by MassDOT and ranked according to standards established by the American Association of State Highway and Transportation Officials (AASHTO). The purpose of the AASHTO rating is to provide a standard to compare the status of bridges in a region and across the country. Many factors are considered when developing the rating of a bridge, such as its structural integrity, the road's functional classification, the designed purpose of the bridge, etc. The AASHTO rating may allow some generalized assumptions, however, because so many factors are rating determinants it is important to research each bridge individually for specific information. Bridges may be further classified as *structurally deficient* (SD) or *functionally obsolete* (FO). Each of these classifications can increase the priority of repair or replacement of the bridge. According to federal aid Bridge Program guidelines, for a bridge to be eligible for rehabilitation it must both be deficient and have an AASHTO rating of 80 or less; and for a bridge to be eligible for replacement it must have an AASHTO rating of less than 50.

MassDOT maintains a listing of all bridges that meet the National Bridge Inventory (NBI) criteria set by FHWA. This criteria identifies bridges that are publicly owned highway bridges longer than twenty feet located on public roads. Railroad and pedestrian bridges are not included in the NBI, nor are bridges that have been closed for more than 10 years. Bridges that are not listed in the NBI are not eligible to receive Federal bridge replacement funding¹. This bridge listing includes the year the bridge was built or rebuilt, the AASHTO rating from the most recent bridge inspection, and whether the bridge is structurally deficient or functionally obsolete. Information on Franklin County bridges and their current classification are shown in a map at the end of this chapter.

Bridges are considered structurally deficient if they fall below specific thresholds. These bridges may span a range of conditions, from requiring a minor, but vital, repair to a more complete rehabilitation. As with all bridges in the Commonwealth, safety concerns are paramount. If a bridge is in need of significant repair to maintain current traffic volumes and vehicular weight, then that bridge should be high on the priority list. Statewide, priority for funding is given to structurally deficient bridges.

Bridges may also become functionally obsolete. Functionally obsolete refers to a bridge's inability to fully support the roads they serve due to variables such as limited width or height even though the bridge itself is structurally sound. Such a determination is based on the current operating capacity of the bridge. This bridge classification helps identify areas where

¹ <http://www.fhwa.dot.gov/bridge/nbis/#10>

mobility may be decreased as a result of the bridge. For example, if a four-lane roadway leads into a two-lane bridge, some level of congestion is expected as a result of the decreased capacity. While the bridge may be structurally sound, the issue lies in the capacity of the bridge to carry traffic. Functionally obsolete bridges may not present a safety

hazard, but may contribute to overall congestion. This bridge classification category can be used to identify problem areas in the transportation network.

There are a total of 298 bridges in Franklin County that are on the NBI, according to the 2014 MassDOT Bridge Inventory. In order for a bridge to be eligible for rehabilitation it must be deficient and have an AASHTO rating of 80 or less. There are 83 bridges (28 percent of total) in Franklin County that are eligible for rehabilitation according to this threshold. Furthermore, 38

Table 5-3: NBIS Bridge Condition, per Town

Town	Bridge Condition			Total Bridges
	Functional	Functionally Obsolete	Structurally Deficient	
Ashfield	10	1	0	11
Bernardston	12	0	3	15
Buckland	12	2	4	18
Charlemont	23	3	3	29
Colrain	20	1	3	24
Conway	13	4	2	19
Deerfield	9	2	5	16
Erving	6	2	2	10
Gill	2	0	2	4
Greenfield	32	10	5	47
Hawley	9	0	1	10
Heath	2	0	3	5
Leverett	4	3	3	10
Leyden	1	0	0	1
Monroe	2	0	2	4
Montague	9	5	4	18
New Salem	1	0	1	2
Northfield	11	1	0	12
Orange	12	0	3	15
Rowe	3	1	0	4
Shelburne	3	0	1	4
Shutesbury	0	0	0	0
Sunderland	1	0	0	1
Warwick	3	0	0	3
Wendell	1	0	0	1
Whately	14	1	0	15
County Totals	215	36	47	298

bridges (13 percent of total) meet the requirements for replacement with an AASHTO rating of less than 50. A total of 47 bridges in the county are formally classified as structurally deficient and an additional 36 bridges are formally classified as functionally obsolete. Table

5-3 presents an overview of the bridge condition for NBI bridges in Franklin County, by municipality.

Several other types of bridges are located throughout the county in addition to those bridges listed on the NBI. The jurisdiction of these bridges ranges from private ownership to being municipally owned. Additional bridge categories include bridges such as pedestrian bridges, culverts and railroad bridges. While MassDOT is responsible for the inspection of all NBI bridges only, MassDOT also maintains an inventory of all other bridges in the state.

In addition to data provided by MassDOT, the FRCOG also collected qualitative data from Franklin County residents as part of the Regional Transportation Plan Update. When asked to indicate their transportation concerns for their community and for the County, 87.5% of survey respondents indicated that road and bridge conditions and maintenance were of high or medium concern. Additional comments from the respondents indicate that bridge conditions are the primary concern.

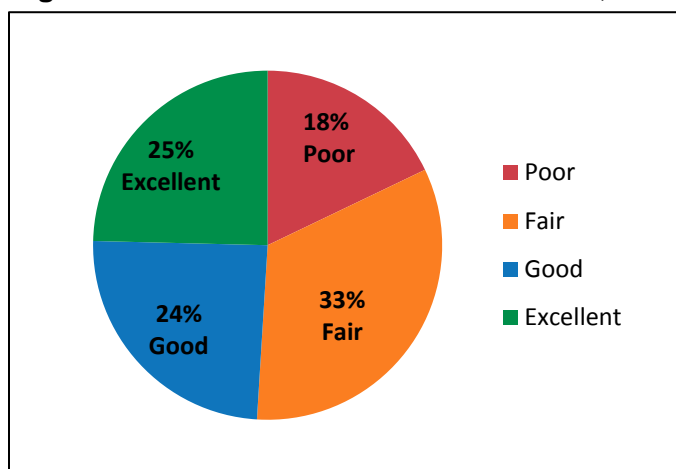
Pavement Management Analysis

A Pavement Management System (PMS) is a planning tool that collects and monitors information on current pavement conditions, evaluates and prioritizes alternative maintenance, rehabilitation and reconstruction (repair) strategies, according to the Federal Highway Administration (FHWA). In Franklin County, it is important to develop a PMS for the region because pavement is such a significant capital investment and a critical component of our transportation infrastructure.

MassDOT and the FRCOG each have a history of conducting pavement management analyses throughout the county. Franklin County has a total of 447.88 miles of roadway that are eligible for federal funding. Of the federal-aid eligible roadways, 58 percent are under town jurisdiction, with the remaining 42 percent maintained by MassDOT. Pavement condition data has been collected by MassDOT for 54 percent of the federal-aid eligible roadways in the county using specialized data collection equipment. A special testing vehicle, the Automatic Road Analyzer (ARAN) collects pavement condition data and rates the pavement condition according to the Pavement Serviceability Index (PSI) on a 5 point scale. Based on this scale, roadway conditions are classified as poor, fair, good, or excellent.² From the roadways that have been surveyed by MassDOT, pavement condition has been estimated for the region and is shown in Figure 5-1.

² MassDOT. FFY 2011 – 2015 Capital Investment Plan. September 2010.

Figure 5-1: Pavement Condition Estimates, 2013



As shown in Figure 5-1, the majority of roadways surveyed are assessed as in good or excellent condition (25% excellent, 24% good). Approximately 33 percent of roadways are in fair condition and 18 percent of roadways are in poor condition.

In order to calculate the anticipated costs of repair and maintenance to bring roadways up to an excellent rating, the

data collected by MassDOT on a sample of federal aid roadways in the county was analyzed using cost estimates derived by neighboring regional planning agencies, including Pioneer Valley Planning Commission, Berkshire Regional Planning Commission, and Montachusett Regional Planning Commission. Estimated maintenance and repair costs are shown in Table 5-5 for three maintenance strategies. These costs are approximate as they are based on an estimated condition of the regional pavement system as well as projected cost estimate figures.

It is unrealistic, due to limited financial and physical resources, to bring all roadways in the county to excellent condition at one time. Furthermore, it is important to note that even as roadways reach excellent condition, they will still need to be maintained in order to prevent deterioration. It is necessary to prioritize pavement management needs throughout the county and balance this with cost and safety considerations. This is further complicated by the fact that the relationship between pavement condition and cost is not linear. For example, the strategy that often seems the most logical (repair the worst roads first), is actually the least cost effective. Research has shown that is far less expensive to keep a road in good condition than it is to repair once it has deteriorated. As roadway conditions worsen, the costs of repairs increase significantly. A roadway that has in poor condition has already reached a point where it cannot be repaired using low-cost treatments, while a roadway in good condition can be maintained that way. Table 5-5 shows that the most cost-effective maintenance strategy is “A: Stop Further Deterioration.” This strategy proposes maintaining roadways that are currently in

Table 5-5: Pavement Management Repair Cost Estimates – Existing Conditions			
Maintenance Strategy	Years	Description	Estimated Cost
A: Stop further deterioration	1-5	Bring roadways in good and fair condition to excellent condition; maintain roadways in excellent condition.	\$24,225,955
	6-10	Bring roadways in poor condition to excellent condition; maintain roadways already in excellent condition.	\$28,762,115
	Total		\$52,988,070
B: Repair the best roadways first	1-5	Bring roadways in good condition to excellent condition; maintain roadways in excellent condition.	\$6,941,793
	6-10	Bring roadways in poor and fair condition to excellent condition; maintain roadways already in excellent condition.	\$50,301,325
	Total		\$57,243,118
C: Repair the worst roads first	1-5	Bring roadways in poor and fair condition to excellent condition.	\$40,364,351
	6-10	Bring roadways which have deteriorated to good and fair condition to excellent condition; maintain roadways already in excellent condition.	\$23,898,519
	Total		\$64,262,870

excellent and good condition and try to also prevent further deterioration of roadways in fair condition and bring those up to excellent condition as soon as possible.

The FRCOG continues to work on implementing a PMS for Franklin County. Pavement condition surveying has begun and several software analysis tools have been tested. The selected software tools will be in place late in 2015. Federal aid eligible roadways in Franklin County will be continually monitored and surveyed on a three-year rotating basis. A database with the results of the surveying will be maintained and a regional report will be regularly produced that summarizes the status of surveyed roadways. The implementation of a PMS in Franklin County is intended to help provide more accurate and detailed information that can be used to determine priority ranking and cost effective repair and maintenance strategies for roadways in the region.

Sign Retroreflectivity

The Federal Highway

Administration (FHWA) has issued federal requirements for public roads on a variety of topics, including signage. These federal requirements for sign standards are derived from the *Manual on Uniform Traffic Control Devices (MUTCD)* and apply to all public roads. These standards are in

place to promote the safety and efficiency of public roads by informing motorists of regulations, warning them of potential hazards, and helping ensure that motorists reach their destinations as safely and efficiently as possible.³



View of Route 63 in Montague

In 2009, the FHWA provided new sign retroreflectivity requirements for all agencies (including towns and cities) that maintain roadways open to public travel. Retroreflectivity is the property of a traffic sign to reflect light back to the driver at night. Highly retroreflective traffic signs are more legible at night. Meeting the new signage retroreflectivity requirements is the responsibility of each town or city.

These guidelines establish minimum retroreflectivity levels. If a sign falls below this minimum value, it needs to be replaced. It is in the best interest of agencies to adhere to this requirement not only due to potential federal funding implications but also with regards to liability. The FHWA states that public agencies that demonstrate a reasonable maintenance policy, as outlined in the new regulations, should be better equipped to successfully defend against tort litigation involving claims of improper sign retroreflectivity. In short, these standards aim to improve traffic safety in all cities and towns during nighttime driving conditions.

The FHWA enacted final rules regarding minimum retroreflectivity levels in 2012. All agencies were required to have a plan to maintain sign retroreflectivity at or above the minimum levels presented in the MUTCD by January 2014.

³ Federal Highway Administration (FHWA), *Sign Retroreflectivity Guidebook: For Small Agencies, Federal Land Management Agencies, and Tribal Governments*, September 2009.

The FRCOG provided assistance to multiple Franklin County towns in developing sign retroreflectivity maintenance plans, including selection of a retroreflectivity assessment method. The plans include procedures for assessment, creation of a sign inventory, a sign replacement plan, an implementation timeline, and cost estimates. Participating towns included Deerfield, Greenfield, Monroe, Montague, New Salem, Sunderland, Warwick, Wendell, and Whately.

Traffic Studies

Deerfield Elementary School Traffic Circulation and Flow Study

In 2013, The Town of Deerfield requested the FRCOG evaluate traffic operations at the Deerfield Elementary School and Pleasant Street (the access road to the school). The study examined pedestrian safety and traffic circulation during morning pick-up and afternoon drop-off periods and included recommendations for improvements based on best practices for traffic operations at schools.

STOP Sign Compliance Study

A study was conducted in 2013 to evaluate intersections with suspected traffic control device compliance issues. The locations were identified through previous planning studies conducted in the region and by surveying local Police Departments. The report focused on four specific locations where STOP sign compliance has been identified as a safety issue and included recommendations to improve compliance with existing traffic controls.

Identification of the Most Hazardous Intersections in Franklin County

Approximately every three years the FRCOG analyzes crash data from the Registry of Motor Vehicles for the twenty-six communities in Franklin County to identify intersections that have experienced a repeated occurrence of crashes. The study identifies the fifty most hazardous intersections and ranks them based on a calculated crash rate that takes into account the severity of each of the crashes, as well as the exposure to crashes based on traffic volumes. The most recent study was completed in 2012 and reviewed crash data from 2007 through 2009. This study is described more thoroughly in Chapter 13 – Transportation Safety. An update of the report, using the next set of available data, will be completed in 2016.

Road Safety Audits

The Road Safety Audit (RSA) process is an effective tool for improving traffic safety at specific locations and is a measure that has been supported for many years by MassDOT and the FHWA. Since the implementation of the multi-disciplinary RSA process in Franklin County in 2010, RSAs have been conducted at nineteen locations in the region. More details about RSA activity in Franklin County are provided in Chapter 13 – Transportation Safety.

Planned and Completed Roadway Improvement Projects

Route 2 Safety Improvements

Since the formation of the Route 2 Task Force in 1994, the FRCOG has been working together with the communities along the Route 2 corridor from Phillipston to Greenfield to create a safer roadway. More than \$70 million has been invested in constructing safety improvements along the corridor. The first improvements included numerous upgrades such as the installation of shoulder rumble strips, new signs and lines, tree clearing for improved visibility, and the installation of variable message signs. The first major construction project was the realignment of Route 2 around the Erving Paper Mill creating a safer climate for both through travelers of the roadway and the mill's loading docks. This work was followed by the construction of a climbing lane, intersection improvements, and a truck weigh station in Athol. This work included installation of an innovative centerline treatment called "Qwick Kurb" along 13 miles of highway in Philipston and Athol. Next was the reconstruction of two bridges and lowering the profile of Route 2 in the Erving area of Erving, along with the construction of protected turn lanes, acceleration and deceleration lanes, and traffic flow improvements in the Erving neighborhoods near the French King Bowling Alley. Improvements in Orange that included intersection and climbing lane improvements, as well as rehabilitation of the Route 122 Bridge, were completed in 2012. Improvements at the intersection of Route 2 and Route 2A in Erving are scheduled for construction in 2016 and designs for improvements in Erving Center and Farley are under development. Improvements in the Gill/Greenfield section are currently being completed as part of the rehabilitation of the Gill-Montague Bridge and additional improvements for this area are in the preliminary planning stage. More detailed information about the Route 2 Safety Improvements and the Route 2 Task Force can be found in Chapter 13 – Transportation Safety.

Greenfield Mountain Climbing Lane

In the 2009 *Route 2 West Safety Study*, it was recommended that a climbing lane be added to the westbound lane of Route 2 over Greenfield Mountain approaching Shelburne. The study concluded that there is enough pavement width on the roadway to accommodate a climbing lane, but not enough to have a desirable shoulder width. MassDOT has restriped the pavement markings and added signs on this section of Route 2 to allow trucks to travel in the shoulder while climbing. FRCOG conducted a follow-up study in 2013 to determine how well these changes were functioning. The study showed that the widened shoulder is working effectively and safely as an informal "climbing lane."

Roundabout at Greenfield Community College (GCC) and Colrain Road

The intersection of Colrain Road and College Drive in Greenfield is located at the entrance to Greenfield Community College (GCC) and has experienced delay and safety challenges.

MassDOT worked with the City of Greenfield to develop improvements to this intersection,

which include the creation of a roundabout. The construction of the roundabout was completed in the spring of 2015, improving safety and traffic circulation.



Roundabout at GCC and Colrain Road in Greenfield

Greenfield Road Improvements

The reconstruction of Greenfield Road in Montague consists of roadway reclamation and minor widening of approximately 2 miles from near Sherman Road south to Hatchery Road. Major elements of the project will improve safety at the intersection of Randall Road (site of a fatal crash), will widen shoulders to improve bicycle accommodation on this segment of the Franklin County Bikeway, and will ultimately connect to a new bicycle and pedestrian bridge under design for south of Hatchery Road. The reconstruction project began in 2014 and is expected to be completed in 2016.

Route 2 in Charlemont

MassDOT and the FRCOG have been working together for several years to make improvements to Route 2 in Charlemont. MassDOT identified seven culverts along this corridor that were originally constructed in the early 1900's that were approaching the end of their design life. Several of these also suffered damage from Tropical Storm Irene in 2011. Since 2010, five culverts have been replaced and two have been repaired. MassDOT also plans to replace the Trout Brook (repaired in 2012) culvert in a future project. A project to reconstruct Route 2 from Route 8A south to Route 8A north is eligible for funding in 2017. This project will also construct improvements in the village center with repair of existing

sidewalk and construction of new sidewalk, as well as traffic calming measures, including crosswalk enhancements and landscaping and signage gateway treatments.

Recommendations for Road and Bridge Infrastructure

- Monitor data for roadway safety and infrastructure performance measures.
- Continue to staff the Route 2 Task Force and advocate for advancement of additional safety improvements.
- Continue to implement a Pavement Management Program.
- Update the Most Hazardous Intersections report using the next set of available data.
- Continue conducting Road Safety Audits and support projects to address safety issues in the region.

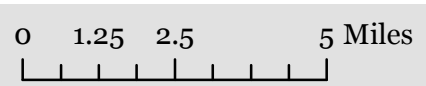


Repaving of a Franklin County roadway.

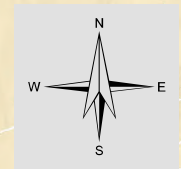
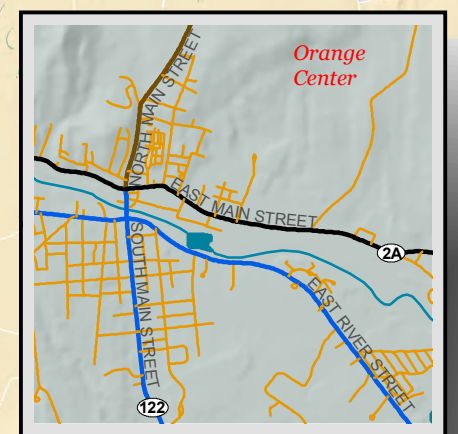
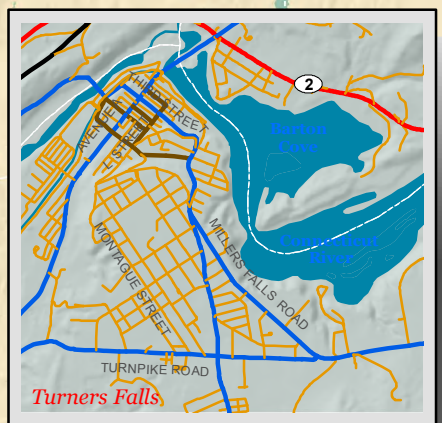
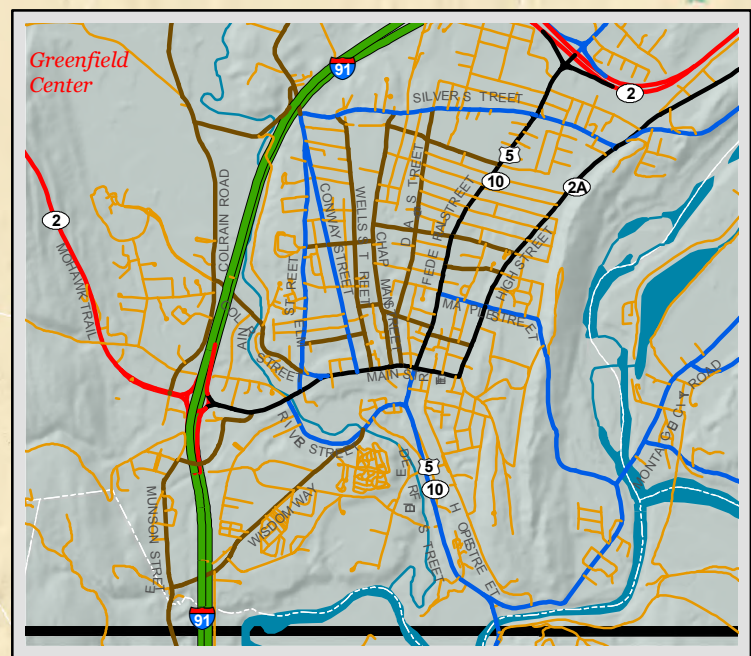
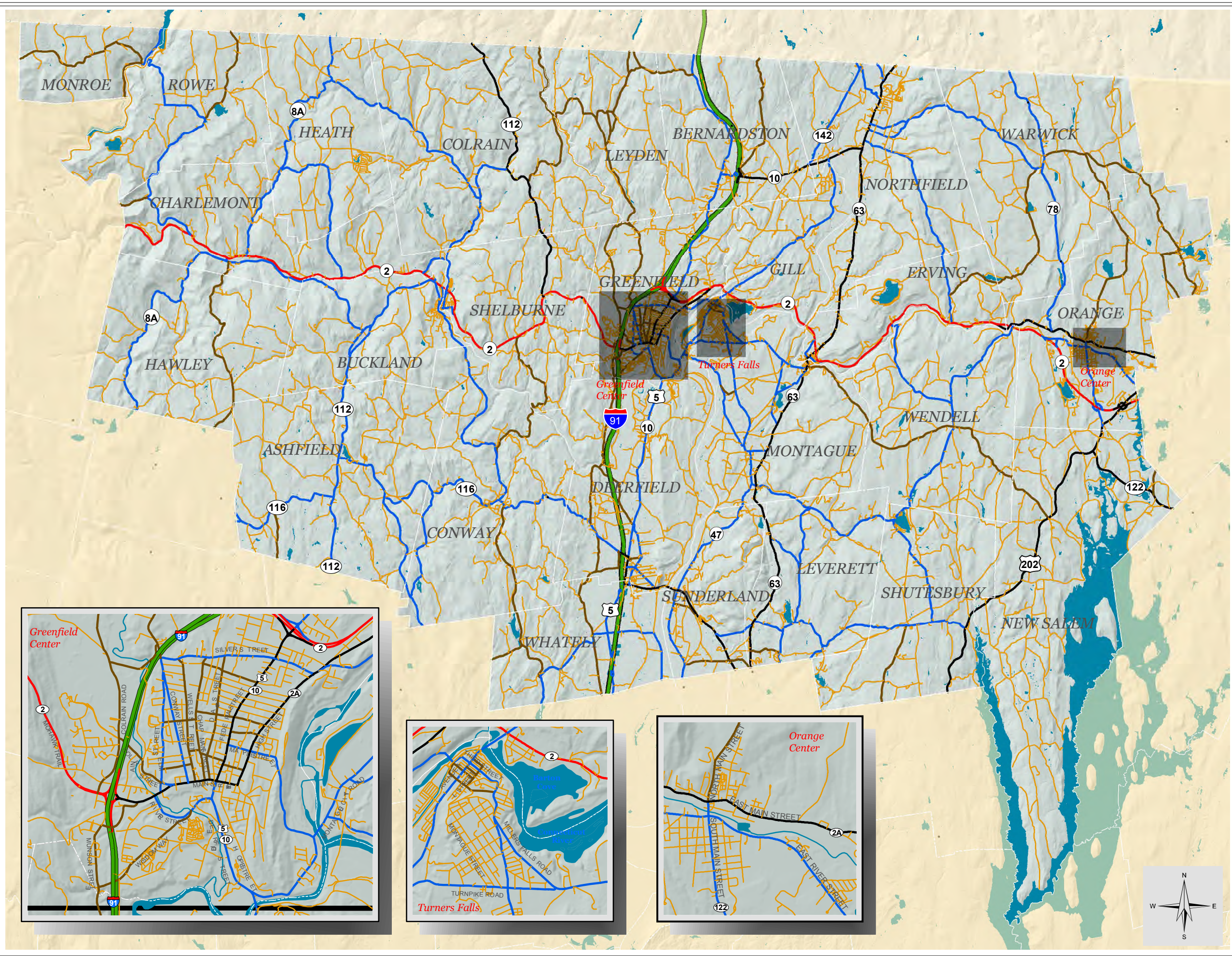
Franklin County Massachusetts

Functional Classification Road Inventory File 2013

- Interstate
- Principal Arterial
- Rural Minor Arterial
- Rural Major Collector
- Rural Minor Collector
- Local
- Town Boundary

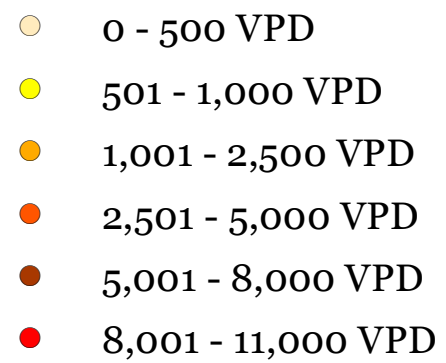


Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



Franklin County Massachusetts

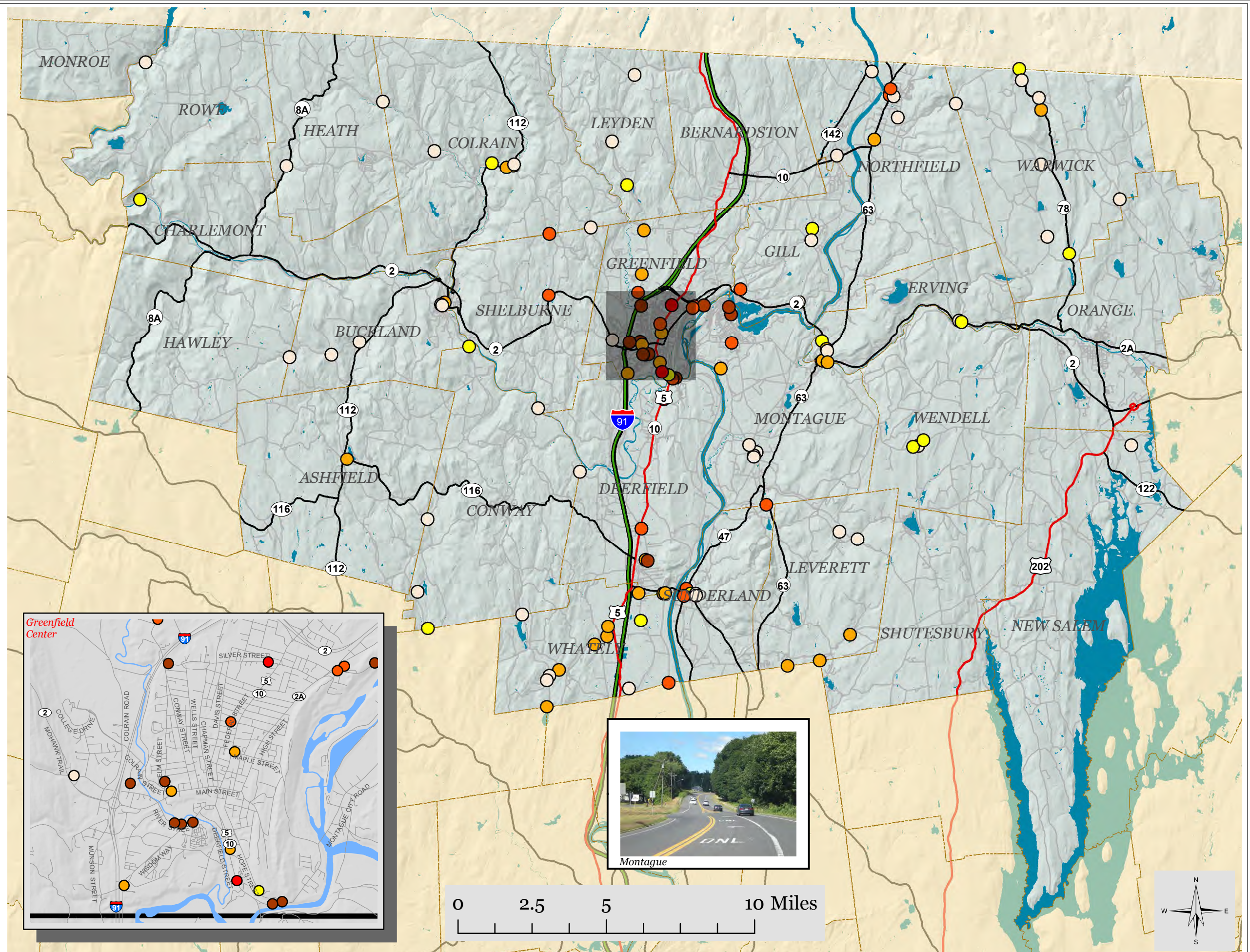
Average Annual Daily Traffic 2012 - 2014



***VPD - Vehicles Per Day**



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



Franklin County Massachusetts

Bridge Locations

American Association
of State Highway
Transportation Officials
(AASHTO) Rating*

- 1 - 50
- 51 - 75
- 75 - 100

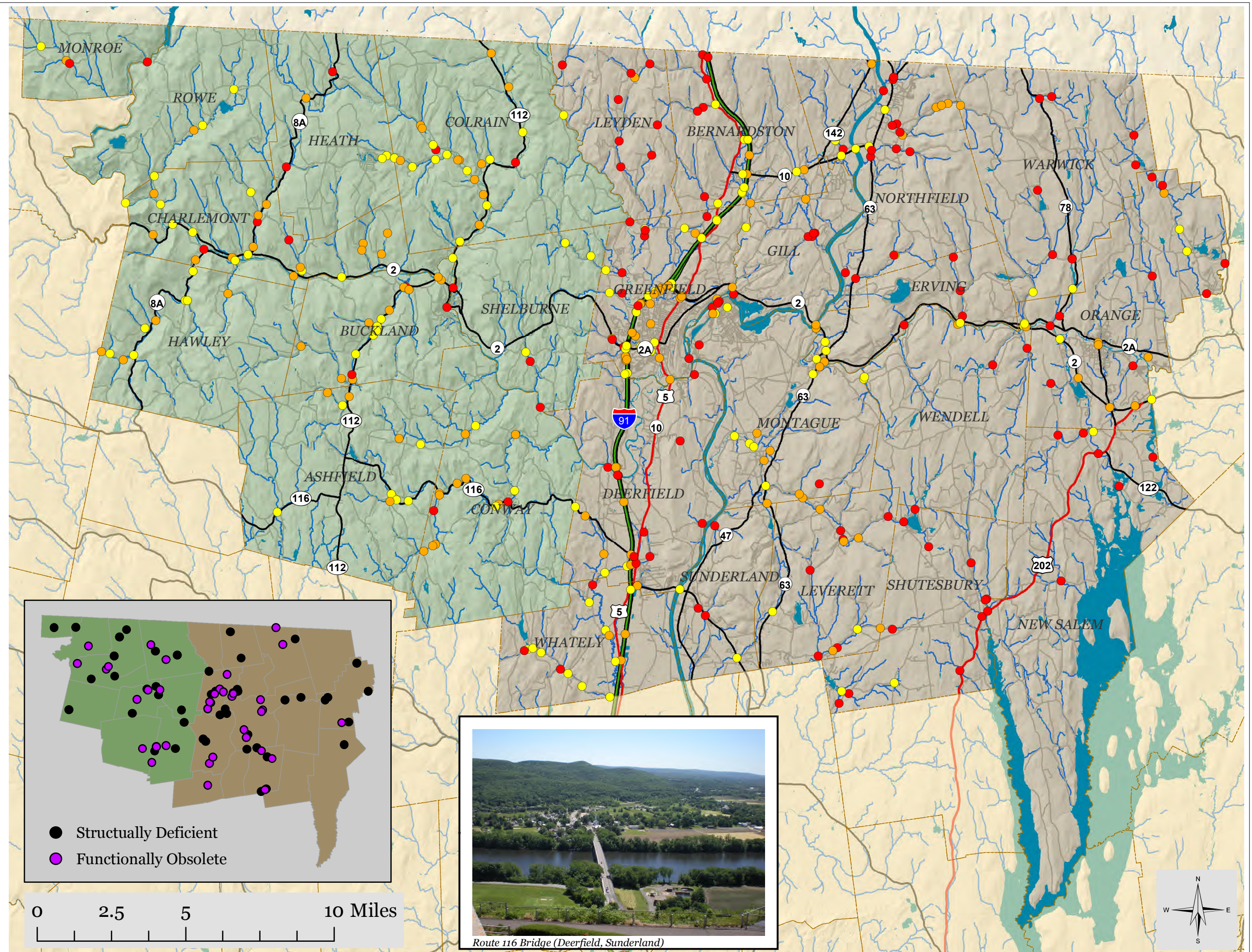
* the higher the AASHTO rating, the
better condition of the bridge

MassDOT District

- District 1
- District 2



Sources: Map produced by the Franklin Regional
Council of Governments Planning Department.
GIS data sources include MassDOT, MassGIS and FRCOG.
Depicted boundaries are approximate and are intended
for planning purposes only, not to be used for survey.



6

Freight Transport



2016 Regional Transportation Plan

6 Freight Transport

Freight transportation is an important issue for Franklin County. The accessibility and efficiency of freight transport plays a vital role in the economy and viability of the region. Most of the freight and goods coming to and from Franklin County are being transported by truck; however, a significant amount of freight that travels through the county is being hauled over its three main rail lines. This chapter will discuss freight transport to, from, and through the region by truck, rail, and air. This chapter will consider opportunities to improve the safety and efficiency of freight movement in the region and will also discuss the transport of hazardous materials in Franklin County.

Current Plans

Massachusetts completed a *State Freight and Rail Plan* in September 2010 that comprehensively examines the state's freight transportation system. This Plan looks at all modes of freight transportation and analyzes issues and opportunities for growth. The Plan notes the significance of the freight transportation links that exist in Franklin County and identifies recommendations for both the region and the state, which are incorporated into this chapter. The Plan estimates that total freight volumes in Massachusetts are projected to increase 70 percent by the year 2030. This large increase could have a significant impact on Franklin County with its major highway routes and railroad lines.

In 2013, the FRCOG conducted an assessment of the movement of goods in the region. This, *Overview of Freight Movement in Franklin County*, examined the current state of freight movement in the region and outlined the potential challenges and opportunities faced by freight in Franklin County. It found that as freight shipping increases in the future, special attention should be paid to the impacts of that on adjoining land uses with respect to potential negative effects from emissions, noise, and the transport of hazardous materials. These impacts apply to both roadway and rail freight shipping.

Existing Conditions

Major Freight Modes

Trucking

Currently, 87% of all freight movement in Massachusetts occurs by truck. Although there is no county-specific data available, this statistic is most likely higher for the Franklin County region which is more rural and as a result relies more heavily on trucking, especially for the “last mile” of delivery. The major trucking corridors in Franklin County are: Interstate 91 (which runs north-south) and Route 2 (which runs east-west). These two highways also

represent the busiest travel corridors in the region for non-commercial traffic. Other active truck routes in the region include Routes 5/10, Route 47, Route 116, Route 63, and Route 112. There are several truck parking facilities on most of the major routes in Franklin County. There are parking facilities located on Route 2 West (Charlemont, MassDOT Park & Ride), Route 2A (Greenfield, MassDOT Visitors Center), Route 116 (Sunderland), I-91 (Bernardston and Whately), and Route 5/10 (Whately). The Whately facility is located at the Whately Diner on Rt. 5/10, which is a full amenity truck rest stop with parking, refueling, showers, and food available.

Freight Rail

Franklin County has approximately 93 route miles of railroad, which are broken down into two north-south routes, one east-west route, and an east-west connector at the East Deerfield Rail Yard. This rail yard is one of the largest rail yards in New England. The map at the end of the chapter shows the location of the East Deerfield Rail Yard and the different railroad lines in Franklin County. There are two other active minor rail yards in the county in South Deerfield, Shelburne Falls, and Millers Falls.

Air Transport

There are two public airports in Franklin County, located in the Towns of Orange and Montague; however, neither of these airports provide air freight service. The closest locations for freight transport are Bradley International Airport, located near Hartford, the Worcester Regional Airport in Worcester, and Logan International Airport in Boston. New York City's major airports – LaGuardia Airport, J.F.K. Airport, and Newark Airport – also provide air freight services and are used by some shippers in the Franklin County region.

Freight Trucking

In order to provide safe and efficient transportation routes for trucks to and through the region, it is important that the region's infrastructure and systems are continually evaluated for possible deficiencies or constraints. The following projects are major improvements that have been planned or have been recently completed with the goal of advancing the safety and efficiency for both general and freight highway transport.

Route 2 East Improvements

Several major improvements have taken place or have been planned for Route 2, the major east-west trucking corridor in Franklin County. Route 2 East refers to the stretch of Route 2 from Greenfield to Philipston. Several projects along this section have been recently constructed, are underway, or have been designed. These improvements focus on overall traffic safety and efficiency, as well as the relationship between freight trucking and non-commercial traffic.

One major Route 2 East project that has been completed was the relocation of Route 2 away from the Erving Paper Mill in Erving. The relocation was necessary to relieve the on-road blockage that occurred when freight trucks were loading or unloading at the mill.



Trucks on Route 2 in Gill.

Other recent

improvements on

Route 2 East include the addition of climbing lanes and turning lanes to improve the roadway's safety. Two bridges were also reconstructed in Erving, with the road profile lowered to improve sight distance. Additional turning lanes and traffic flow improvements are planned for Farley and Erving Center and are currently under design.

Another major improvement project that has been completed is the creation of a truck weigh station on Route 2 westbound in Athol. This is the first weigh station along the Route 2 corridor. The presence of the weigh station will help ensure that freight trucks on Route 2 are not carrying excessive weight that could potentially cause safety issues.

Route 2 West Improvements and Studies

Improvement projects have also been completed, designed, or explored for Route 2 West, which in Franklin County spans from Greenfield to Charlemont. A number of issues related to the safe and efficient movement of freight by trucks on Route 2 West have been identified. Improvements have taken place to address some of these issues, but further exploration and funding is needed to address all of the identified problems.

Along Route 2 West in Charlemont, there were three bridges that needed either replacement or rehabilitation. Due to their poor conditions, all three had weight restrictions that limited their use by heavy freight trucks. These projects have now been completed with designs to ensure safe passage for freight trucks and other vehicles.

Another major improvement project along Route 2 West that has been completed is the redesign of the Route 2 Rotary. The improvements were aimed at addressing safety issues,

including trucks crowding out other vehicles on the rotary. The project also redesigned Route 2 at Colrain Road, just west of the rotary, to facilitate trucks turning onto Colrain Road and to add pedestrian facilities. Recent studies have shown that this project has been a large success in terms of safety.

In the 2009 *Route 2 West Safety Study*, FRCOG recommended that a climbing lane be added to the westbound lane of Route 2 over Greenfield Mountain. Slow-moving traffic (usually freight trucks) going up Greenfield Mountain on Route 2, which has one lane in each direction, often used the roadway shoulder as a second travel lane. However, the shoulder was not wide enough to accommodate tractor-trailers, leaving these large trucks to straddle both the breakdown lane and travel lane, creating a hazardous situation as the faster moving vehicles in the travel lane were forced into the oncoming lane in order to pass. In 2012, MassDOT widened the shoulder to allow slow-moving trucks to pull fully onto the shoulder to act as an informal climbing lane and posted signage saying “Slower Trucks Use Shoulder.” In 2013, the FRCOG evaluated the effectiveness of these changes and found that it does improve safety along this stretch.

Additionally on Greenfield Mountain, there has been concern about safety issues related to trucks traveling eastbound down the mountain towards the congested commercial area just prior to the rotary. This section of Route 2 has a steep 6 percent grade and the concerns were related to trucks’ ability to safely brake before the congested area. The *Route 2 West Safety Study* recommended that ITS (Intelligent Transportation Systems) be installed on Route 2 eastbound coming down the mountain to warn freight truck drivers if they are at risk of overheating their brakes as they travel down the incline.

Challenges to Freight Trucking

Aside from Route 2, there are other locations in Franklin County that present challenges to freight trucking and may need improvements. Listed below are a few specific constraints associated with freight trucking in the region:



A tractor trailer stuck under the Bank Row underpass.

- Bank Row, Greenfield: There is a clearance problem with the train overpass. Freight trucks are forced to avoid this central artery to downtown Greenfield. An overheight vehicle detection system could alert truck drivers to take an alternate route before they reach the overpass. This site has not yet been identified as a priority bridge improvement.
- Turners Falls Road, Montague: Trucks traveling north on Turners Falls Road have difficulty turning onto Turnpike Road. This intersection has not yet been planned for improvements.
- Montague City Road and Cheapside Street intersection, Greenfield: There is a low bridge at the curve where Montague City Road and Cheapside Street intersect. The low bridge limits truck access to the nearby industrial area, and as a result, trucks often need to use long alternative routes. Options such as raising the bridge or lowering the road would pose significant challenges. Another option is widening the sharp curve. This intersection needs further study before improvements can be planned.
- General Pierce Bridge, Greenfield: This bridge is currently under preliminary design for a major rehabilitation. Local trucking companies have expressed concern with the current weight limit on this bridge, which is 36 tons. For larger trucks that exceed this, they must use an alternate route on Mountain Road, which was not designed for large trucks. To resolve this conflict, there are two options. The first is to raise the railroad bridge on Cheapside Street to 13'6." The other option is to increase the weight limit on the General Pierce Bridge, when it is rehabilitated, to 49 tons.
- Iron Bridge, Shelburne Falls: The historic iron bridge separating the towns of Shelburne and Buckland in Shelburne Falls is a historic bridge that was rehabilitated in 1997. Its low clearance prevents larger trucks from accessing the Buckland side of Shelburne Falls from Route 2/Maple Street. Trucks must travel further west on Route 2 and enter Buckland via State Street to avoid being stuck at the Iron Bridge. An overheight vehicle detection system, supplemented by better signage and better information provided by GPS companies are needed to help freight trucks access the correct side of Shelburne Falls by the correct exit from Route 2.

Scenic Byways

Another issue related to freight transport involves the region's many scenic byways and the fact that these scenic byways are located on roadways that also serve as major trucking routes. There are five designated scenic byways that run through the county. Scenic byways

represent travel corridors with unique scenic, cultural, and tourism value. Although no significant changes in freight trucking routes are recommended at this time, the special characteristics of scenic byways needs to be taken into consideration when planning improvements for these roadways. For more information on Franklin County's scenic byways, please refer to Chapter 11: "Scenic Byways and Tourism."

Transportation of Wide Loads

The increasing interest of renewable energy powered by wind has a potentially significant impact on the type and number of wide loads passing through the region. Franklin County, especially the western portion of the county, and neighboring Berkshire County are rich in wind resources. The wind turbines are constructed on-site with very large prefabricated components ranging from 115 to 160 feet in length and must be transported via roadway to often remote areas. For comparison, the average 18-wheeler tractor-trailer ranges in length from 70 to 80 feet in length from the front of the cab to the end of the trailer.

Many of the wide-load trucks cannot be accommodated on most roads in Franklin County, or much of New England. The wide loads are larger than one lane width and therefore can crowd other vehicles, forcing them aside as they pass through. The Commonwealth of Massachusetts Commercial Motor Vehicle Center is responsible for permitting the transportation of non-reducible loads, also referred to as "wide-loads." If a transporter wishes to move a load of twelve feet or more in width over state highways, they are required to apply for a "daily trip" permit. For "super-loads" (over 130,000 pounds), MassDOT must conduct a full structural analysis of the planned roadway to ensure that the roads and bridges can handle the weight and size of the load.

In 2013, the FRCOG examined the most likely routes in the region to transport wind turbines and the range of impacts this transport could have on the region. The impacts include: the construction of temporary roads leading to the final sites, increased traffic (not just wide-loads) associated with the construction of the projects, and traffic flow disruption. When a wind generation facility is being planned in the region, these factors should be addressed.

Freight Rail Transport

While the vast majority of freight is shipped by truck in New England, MassDOT has projected that the amount of rail freight shipments will double over the next 20-30 years. This increase could have a significant impact on Franklin County as two major New England rail lines pass through the region.

Rail Lines

As highlighted earlier, Franklin County has 93 route miles of railroad, including two north-south routes and one east-west route. There is a map of the rail lines at the end of this chapter. The north-south routes are the Connecticut River Main Line (owned by the Commonwealth of Massachusetts) and NECR Main Line (owned by New England Central Railroad). The east-west line is the Patriot Corridor route for Pan Am Southern. This route runs along Route 2 and follows the Deerfield and Millers Rivers. A small east-west/north-south connector, the East Deerfield Route, is also owned by Pan Am Railways.

Patriot Corridor: (also known as the Freight Main Line) is the most important rail line in the Commonwealth of Massachusetts – serving up to 5 million tons annually of freight between eastern Massachusetts and eastern New York (near Albany) at Rotterdam Junction. It provides an important link for the paper and lumber industries in northern New England and Canada. There are two east-west rail lines in



Freight train passing through Franklin County.

Massachusetts (the other roughly follows the Massachusetts Turnpike), but this route has less severe grades because of the 4.75 mile long Hoosac Tunnel that runs through, rather than over, the Berkshire Mountains. While the Hoosac Tunnel is an important advantage for this line, it does limit the freight capacity that can be hauled due to tunnel height restrictions (19'6"). At Ayer this line branches off to Boston, Lowell (NH), and Maine.

This rail line is owned by Pan Am Southern (PAS), which is a joint venture between Norfolk Southern and Pan Am Railways (PAR) that was formed in 2008. A part of this joint venture includes the rehabilitation of 138 miles of track, replacement of ties, and the addition of over 35 miles of new rail between Ayer, MA and Mechanicville, NY. These improvements will allow for increased freight capacity to be transported with a higher 286,000 pound weight limit and first generation double-stack capability. The improvements will also increase track speeds. The joint venture will create another Class I freight railroad in Massachusetts for increased competition.

Connecticut River Main Line: This rail line is owned by the Commonwealth of Massachusetts. The Commonwealth (MassDOT) purchased the rail line in 2014 from Pan Am Railways (PAR). The Line has connections to the NECR rail line in Northfield. This line is now carrying Amtrak passenger service with a stop in Greenfield at the John W. Olver Transit Center. This service was made possible due to funding received from the 2010 American Recovery and Reinvestment Act (ARRA), which funded track improvements and passenger platform construction along the line. The track improvements also allow for greatly increased speeds along this line for freight traffic.

NECR Main Line: This rail line is owned by New England Central Railroad (NECR), which is a Class III railroad. The line is composed of 53 miles of right-of-way between Monson and Northfield. It has a major rail facility located in Palmer in Hampden County, where it interchanges with CSX. The line also interchanges with the Connecticut River Main Line in Northfield and Montague in Franklin County. These large numbers of connections makes this line competitive with the national rail system. This line is also a major north-south corridor for the New England region, connecting Canada with Connecticut and New York. Average annual freight rail tonnages is 1.3 million tons, much of it composed of lumber products and lime slurry shipped from Canada.

Rail Yards

There are limited public railroad loading areas suitable for transloading in Franklin County. A transloading facility refers to a terminal where freight is transferred from one mode to another. Transloading facilities enable companies that are not located along rail lines to combine lower cost rail hauling with truck delivery. Typical goods that move through transloading terminals include: lumber, sheetrock, plastic pellets, bulk paper rolls, pipes, and bulk liquids such as fuel oil.¹ Modern transloading facilities are accessible to major highways, have many tracks, covered warehousing, and room for storing and moving tractor-trailers. While Franklin County does not have a transloading facility, below is an inventory of the rail facilities in Franklin County and a general evaluation of the facility's potential for transloading freight.

- East Deerfield Rail Yard: The East Deerfield Rail Yard, located off River Road, is partially owned by the Commonwealth (MassDOT), but is subject to permanent easement for railroad uses by Pan Am Southern. The rail yard is located on the Patriot Corridor that travels east-west and is connected to the Connecticut River Main Line that travels north-south. The yard is approximately one and a half miles long and a half-mile wide. It has the capacity to sort and hold up to 900 rail cars

¹ Indus-Rail Co., Preliminary Report Freight Diversion Study, conducted for the Franklin Regional Council of Governments, 1999, p. 5.

per day. Approximately 600 to 900 cars pass through the yard on a daily basis. The rail yard is used primarily as a classification yard for trains coming from the Pan Am north-south and east-west main rail lines. There are several public unloading tracks, and other tracks with the potential for public unloading. Only one track appears to be used for unloading now, primarily for unloading sodium chloride. The East Deerfield Rail Yard is located between two rivers (the Connecticut and Deerfield) on the east and west, wetlands on the north, and a residential neighborhood on the south. The road access to the rail yard was improved in 2003 as a result of a project that increased bridge clearance at the River Road bridge. This helped immensely in providing direct road access from the facility to the Route 5/10 corridor and Greenfield. The Deerfield Master Plan (2000) suggested that the rail yard could be an appropriate location for a future transloading facility. The rail yard was used for some transloading of freight historically. A modern transloading facility would require additional storage space and equipment at the rail yard, but is feasible for the site. One result of a new transloading facility would be increased traffic in and out of the rail yard. Another concern of expanding the facility is the potential for contamination and adverse impacts on the natural resources in the vicinity, including the Deerfield River (located ¼ mile west from the rail yard) and the Connecticut River (located ¼ mile east and ½ mile to the north of the yard).

- **South Deerfield:** There is a small rail facility in South Deerfield, off of Elm Street and Tine Drive. The facility has two public unloading tracks and a small amount of use. The access is poor to both tracks and there are no storage capabilities. The site was used for small-scale transloading historically, but would likely not be suitable for a larger-scale facility now.
- **Millers Falls:** The Millers Falls rail yard is located off of East Main Street, at the junction of two major railroad lines, the NECR and the PAR. The yard includes a disconnected facility with a dock and ample trailer storage on the PAR side. NECR has three public railroad tracks used for unloading sodium chloride with poor track access and limited trailer storage.

Rail Sidings

In 2013, the FRCOG conducted an inventory of rail sidings in Franklin County. Rail was once historically very important to the local economy. As a result, the county has a number of rail sidings that have been constructed along the currently active rail lines in the region. Prior to

this project, the FRCOG did not know how many sidings existed or where they were located. For the Inventory, the FRCOG compiled a table of all existing sidings by rail line and direction with accompanying map. The FRCOG also created a second table with a list of all properties that have the potential for either accessing adjacent rail sidings or developing new sidings. Both of these tables can be used for understanding the potential of freight movement by rail in the county and also to promote economic development in the region.

Challenges to Freight Movement on Rail

Idling Issues Next to Residential Uses

Train locomotive idling is a recent issue that Franklin County has encountered, particularly in the Millers Falls rail yard where residential land uses closely abut the rail yard. Train locomotive idling occurs when trains are stationary, either at railyards or on the tracks or track sidings, and do not turn off the locomotives. Locomotive idling is necessary to some extent for a variety of reasons including weather conditions, safety testing, and car checks in which power is needed. The state of Massachusetts has a 30 minute locomotive idling limit. While a locomotive idles, air and noise pollution occur, which can be harmful and disruptive to neighboring land uses. There are ways to minimize the idling and its effects, such as using cleaner diesel fuel or various locomotive technologies, such as Auxiliary Power Units (APUs) which are small diesel-powered generators that maintain many locomotive systems within required parameters when the engines are turned off. These technologies are not always applicable and locomotives must sometimes idle for longer periods of time.

Safety of At-Grade Crossings

The upgrades to the Connecticut River Main Line to accommodate the return of Amtrak have allowed speeds to increase from an average 10 miles per hour to a much faster 70-75 miles per hour. As a result of these dramatically increased speeds, MassDOT conducted evaluations of all of the at-grade road-rail crossings to ensure that they are properly equipped with warning devices that will provide adequate safety for crossing vehicles with the higher train speeds. The FRCOG also provided recommendations at specific crossings where there may be pedestrian and bicycle activity. Because there is such a large increase in speed, the performance of these warning devices should be continually monitored. Maintenance and repair of grade crossing warning device equipment are the responsibility of the railroad owner. The Federal Railroad Administration has established minimum inspection requirements for railroad maintenance of the warning systems, and each operating railroad is responsible for inspecting crossing system signals and equipment. There are a number of private road crossings in Franklin County that are not required to have any warning devices. The much higher speeds on this line may warrant attention to this gap. Current improvements to the Freight Main Line by Pan Am Southern should also include

an evaluation of safety measures at the at-grade crossings. The speeds on this line are not expected to increase as fast as the Connecticut River Main Line, but any changes should be assessed for safety.

Safety of Freight Movement

Transport of Hazardous Materials

In August 2010, the Franklin County Regional Emergency Planning Committee (REPC) completed the creation of a Regional Hazardous Materials Emergency Plan (HMEP) with support from the FRCOG. The development of the HMEP serves several purposes, including compliance with the statutory requirements that all regional Emergency Planning Committees develop, exercise, and annually review a Hazardous Materials Emergency Plan. Also, no regionally focused planning tool had previously existed to describe and analyze hazardous threats in Franklin County. Third, a regional plan was needed to standardize Hazardous Materials release reporting, notification, and response.

Among the HMEP's priorities is addressing the potential issues associated with the freight transport of hazardous materials and having an emergency plan for hazardous material spills. The HMEP assumes that virtually all railway and road corridors transport hazardous materials at some times and that, consequently, any rail line or roadway can be a potential hazardous material spill site.

The HMEP includes an analysis of the level of hazardous materials transported in the region on major roadways and on rail lines. This analysis is based on a one-time study of the level of general freight transport on rail facilities and major roadways, and the amount of freight traffic that contained hazardous materials. This study was conducted in 2003. The study estimated that approximately 13 to 15 trucks per hour traveling through the region contain hazardous materials. Most of these trucks are on Interstate 91. For rail transport, it was estimated that there are 100 to 130 train cars with hazardous materials passing through the region each day. The study also found that up to 500 rail cars were stopped at the East Deerfield Rail Yard at any given time, with 20 to 50 of them containing hazardous materials. See Table



Freight train passing through a roadway underpass.

6-1 for a summary of transport of hazardous materials by rail in the region.

Table 6-1: Estimated Level of Hazardous Material Transport on Area Rail Lines

Rail Line	Trains per Day (General Merchandise)	Average Number of Cars per Train	Average Number of Cars per Train with Hazardous Material
Patriot Corridor Line	5 - 12	50	4
Connecticut River Main Line	2 – 3	30	2
NECR Main Line	1	60	5
East Deerfield Rail Yard	10 – 15*	n/a	2 – 5

*Trains passing through the yard. Source: Franklin County Regional Emergency Planning Committee, "Franklin County Hazardous Material Emergency Plan and Maps," 2010.

The only known significant transportation change since the 2010 HMEP report is the increase in ethanol transport by rail through the county. The Patriot Corridor has been identified by the Massachusetts Emergency Management Agency (MEMA) as a potential primary rail route to carry Ethanol-85, which requires different fire suppression equipment and methods for extinguishing than for gasoline-fueled fires.

Chemical Incident Exercises and Response

The Franklin County Regional Emergency Planning Committee (REPC) has conducted a number of training exercises in the last few years for dealing with chemical spills. In 2004, in the first such training exercise in more than a decade, FRCOG and the REPC conducted a full-scale training exercise at the Buckland Trolley Museum Railyard in Shelburne Falls. The exercise provided an opportunity to practice chemical spill response through a scenario of a chemical leak caused by a car crash with a rail tank car on an active rail line. The exercise was attended by responding departments from surrounding towns, the regional district (District 4) Hazardous Materials Team, and rail employees.

Since the completion of the HMEP in 2006, mock chemical spill exercises have been carried out for four Franklin County communities as part of implementing the plan. These exercises were designed to test the regional preparedness for dealing with chemical releases and the coordination of different agencies in addressing such situations and in dealing with evacuations.

From 2010 on, the REPC has annually conducted tabletop exercises, primarily focused on scenarios involving the spilling of ethanol. The Massachusetts Department of Environmental Protection found that ethanol production and transport had increased, and was expected to continue to increase, leading to the REPC prioritization of ethanol response.

The REPC participated in the development of a local Ethanol Response Plan, and tested that plan in 2014. In the past year, PanAm railways and the Federal Railroad Administration provided the REPC with a safety seminar to address the concerns related to increased rail traffic and speed as passenger rail re-entered the region.

These types of preparedness activities help create a regional response that is timely and well-coordinated. Franklin County has experienced hazardous material spills in the past. In 1999, a train derailed in Charlemont and dumped an estimated 6,000 gallons of liquid latex into the Deerfield River. In September 2006, a freight train headed to the East Deerfield Railyard derailed onto its side with 20 cars carrying feed grain and vegetable oil going off the tracks. Fortunately, none of the cars ruptured. The rapid response to this derailment demonstrated successful coordination between local, regional, and state officials.

Recommendations for Freight Transport

- Continue to assist with the current and planned improvement projects on Route 2 East and to monitor how they impact freight trucking.
- Continue to work with local communities and highway officials to address safety concerns related to trucks transporting wide loads through Franklin County.
- Continue to monitor and assess the transport of hazardous materials in the region and to develop, update, and coordinate plans with the Regional Emergency Planning Committee and appropriate agencies for responding to a hazardous materials spill.
- Conduct a study to assess which roadway crossings of rail lines are potentially hazardous, and to recommend changes to improve the safety of these locations.
- Rehabilitate the General Pierce Bridge with an increased weight limit of 49 tons to make truck shipping through the region more efficient and safe.
- Evaluate the options of improving the low-clearance overpasses in Greenfield on Bank Row and at the Montague City Road and Cheapside Street intersection.
- Explore the installation of overheight vehicle detection systems at low clearance overpasses and bridges, including the Iron Bridge in Buckland and Shelburne.

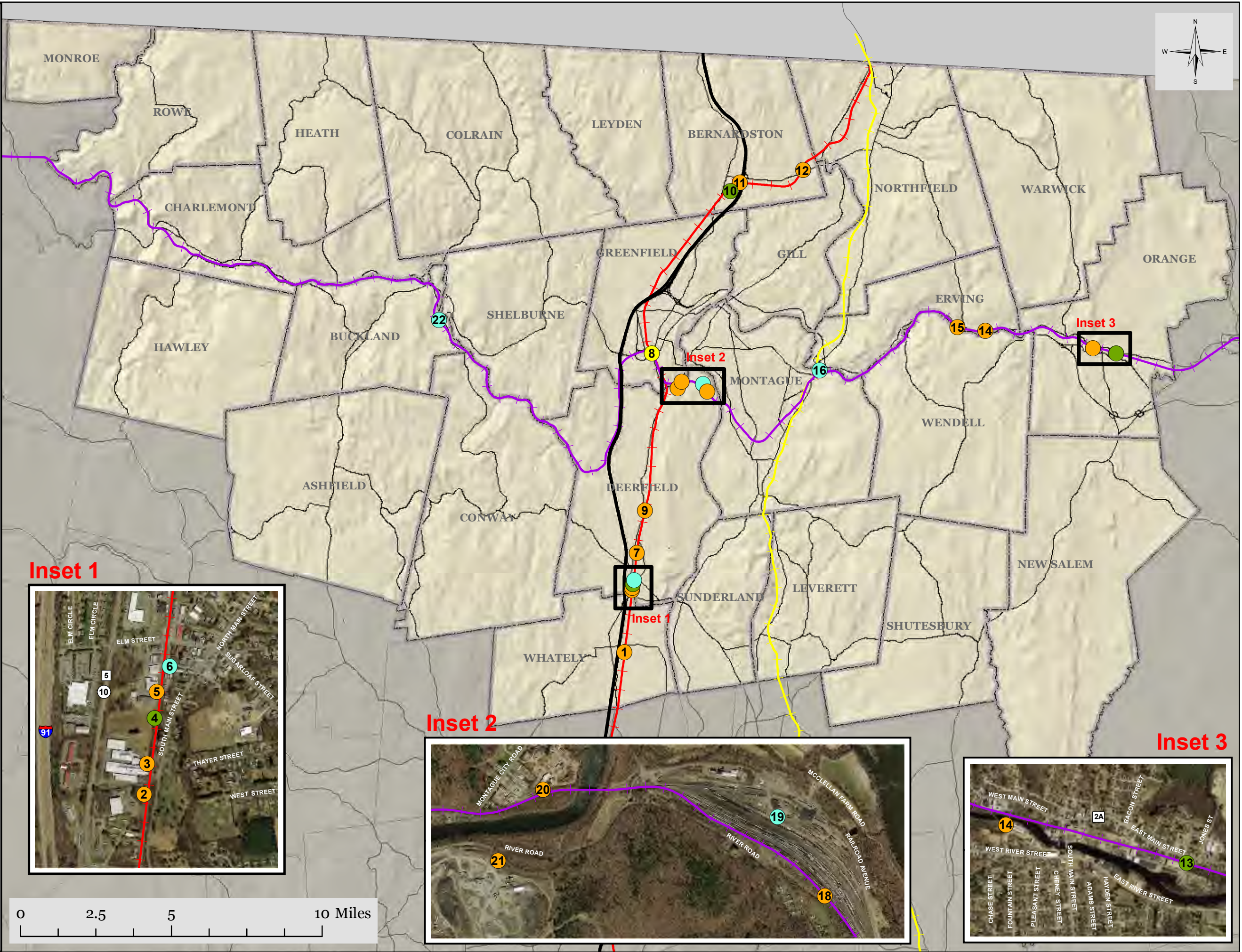
Franklin County Massachusetts

Rail Sidings Inventory

- **Railyard**
- **Passenger Rail Stop**
- **Rail Siding present**
- **Site for potential rail siding access or development**
- + **Connecticut River Main Line**
- + **East - West Freight Main Line/Patriot Corridor**
- + **NECR Main Line**
- **Major Road**

ID	Abutting Parcel Description
1	Yankee Candle Company
2	Harris Rebar
3	Atlantic Furniture
4	Yankee Candle Company (field)
5	Crop Production Services
6	South Deerfield Unloading Area
7	Channing Bete Company
8	JWO Transit Center
9	Welch (farmstand)
10	Priority Development Site Lot 1
11	Kringle Candle Company
12	CaroVail
13	Rodney Hunt-Fontaine, Inc.
14	Former Erving Paper/Cereal Factory site
15	Erving Industries
16	Former Usher Mill site
17	Millers Falls Railyard
18	Pan Am Southern
19	East Deerfield Rail Yard
20	wTe Recycling Inc
21	Trew Stone/All States Materials Group
22	Shelburne Falls Railyard

Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



7

Passenger Rail



2016 Regional Transportation Plan

7 Passenger Rail

Railroads have a long and proud history in Franklin County dating back to the 1840s. In 1920, there were four separate railroad companies offering freight and passenger service to several towns in Franklin County, and as many as seventy trains a day operated in all directions. Today, Amtrak, the national passenger rail corporation, operates one train daily that passes through Franklin County twice a day on its travel between Washington, D.C. and St. Albans, Vermont.

Existing Conditions

Knowledge Corridor/Connecticut River Main Line Passenger Rail

Historically, passenger rail service in Western Massachusetts traveled north-south along what is known as the Connecticut River Main Line or the Knowledge Corridor. This line roughly parallels Interstate 91 and the Connecticut River from New Haven, CT to St. Albans, VT and beyond. During the 1980s, due to a series of unresolved disputes regarding track maintenance, Amtrak relocated service away from the Connecticut River Main Line, traveling inland from Springfield, MA to Palmer, MA, where it turns north and rejoins the Connecticut River Main Line in East Northfield, MA. This detour added approximately 25 minutes to each one way trip and removed direct service to Franklin County. However, in 2014, Amtrak returned the Vermonter service to the Connecticut River Main Line with stops in Springfield, Holyoke, Northampton, and Greenfield once per day in each direction.

In January of 2010, the Commonwealth of Massachusetts was awarded \$70 million in federal stimulus funding to make improvements to the Connecticut River Main Line to extend and restore passenger service to the Knowledge Corridor. The improvements included: crosstie and rail replacement, rehabilitation of grade crossings, reactivation of passing sidings, upgrading of switches and signals, and improvements to bridges. The restored alignment cuts 25 minutes per trip and adds stops in Northampton, Holyoke, and Greenfield. These improvements allow freight trains to operate at a much faster speed of 40 miles per



Inaugural run of the first passenger train to return to Greenfield on December 29, 2014.

hour, rather than the previous 10 miles per hour. The passenger rail service can also now travel significantly faster as well – up to 80 miles per hour through the region. The newly rerouted Vermonter train began service on December 29, 2014. The train now arrives in Greenfield twice a day (once in each direction) at the John W. Olver Transit Center.

The Vermonter route is heavily subsidized by the Vermont Agency of Transportation, MassDOT, and the Connecticut Department of Transportation. It travels between Washington D.C. and St. Albans, VT via Philadelphia, New York, and Springfield. This route used to connect to Montreal, Canada, first by train, and later by bus. However, in 2004, the connecting bus service to Montreal was discontinued. As a result, the Vermonter service no longer provides a connection to Montreal. However, regional leaders are making progress in reconnecting Montreal with passenger rail service. The main factor in preventing access to Montreal has been border crossing issues, but it is anticipated that these issues will be resolved in the next year.

Current Activities and Future Planning

New England Vision for High Speed and Intercity Passenger Rail

In 2009, the six states in New England came together to create a Vision for a future regional rail system that will enhance New England in many ways, including: providing a foundation for economic competitiveness; promoting livable communities; and improving energy efficiency and environmental quality. The Vision is based around a high speed rail network that will link major cities in New England with smaller cities and rural areas and internationally to Montreal. This high speed rail network is composed of a few key corridors as shown in the map on the following page. Significant investment and infrastructure improvements to the existing rail lines along these corridors have been made or are under active exploration. The following section will detail the Northern New England Intercity Rail Initiative (NNEIRI), which is the formal study to evaluate service options along the identified key corridors.

Northern New England Intercity Rail Initiative

Massachusetts, Vermont, and Connecticut are partners in the Northern New England Intercity Rail Initiative (NNEIRI), which is a study to examine the opportunities and impacts of more frequent and higher speed passenger rail service in the three states. Specifically, the Massachusetts Department of Transportation (MassDOT) and Vermont Agency of Transportation (VTRANS), in collaboration with the Connecticut Department of Transportation (ConnDOT) and the Federal Rail Administration (FRA), are examining two major rail corridors known as the Inland Route and the Boston-to-Montreal Route. The Inland Route corridor links Boston and Western Massachusetts via Worcester and Springfield, MA and then travels southerly from Springfield to New Haven, CT connecting to the larger Amtrak Northeast



Northern New England Intercity Rail Initiative Study Map. Source: MassDOT

Corridor. The Boston to Montreal corridor is the same as the Inland Route between Boston and Springfield. From Springfield, the rail corridor then runs northerly following the Connecticut River Main Line into Vermont and ending at the Montreal Central Station in Quebec. The goal of the NNEIRI Study, which includes the entire 470 mile corridor between Boston, Springfield, New Haven, and Montreal, is to:

- Evaluate ridership potential;
- Identify environmental effects; and
- Create service development plans for both corridors.

Current Project Status

The NNEIRI has evaluated three “Initial Build Alternatives” and a “No Build Alternative” for potential passenger service along the Inland and Boston-to-Montreal Routes. They included variations of speeds, equipment, and track engineering. After evaluating these alternatives, the study proposed in 2015 a “Draft Build Alternative Service,” which recommends:

- Top speeds of 75 mph;
- No express service between major cities (local service only);
- 8 round trips between Boston and New Haven (via Springfield);
- 1 round trip between Boston and Montreal (via Springfield);
- Double-tracking between Worcester to Springfield; and
- Additional Vermont sidings.

The next steps for the NNEIRI is for the project partners to conduct a Tier 1 Environmental Assessment, hold stakeholder engagement and public meetings regarding the proposed Draft Build Alternative, and develop Service Development Plans for each corridor.

New Haven-Springfield Commuter Rail Implementation

Part of the Vision for the New England High-Speed and Intercity Rail Network is the New Haven-Springfield commuter rail line. Formal planning for improvements to this corridor has been in progress since 2005. The New Haven to Springfield commuter route is composed of 62 miles of existing rail infrastructure that are currently owned and operated by Amtrak. This rail line, which is often referred to as the “Springfield Line,” travels from Union Station in New Haven, CT through numerous towns and cities to Union Station in Springfield, MA. The new rail service is envisioned to provide future commuter rail access to the towns and cities along the rail corridor; multiple links to Amtrak’s Intercity service; direct links to the existing Metro North Railroad and Shore Line East Commuter Rail services in New Haven; and a connection to the proposed New Britain-Hartford Busway.

Project History

In June 2005, the Connecticut Department of Transportation (ConnDOT) completed an implementation study for commuter rail service between New Haven, Connecticut and Springfield, Massachusetts. The Commuter Rail Implementation Study evaluated the ridership, impacts, and costs of providing commuter rail service from New Haven to Hartford to Springfield, and explored various service options.

Current Project Status

In August 2010, ConnDOT completed a *Service Development Plan for the CT New Haven-Hartford-Springfield (NHHS) Corridor*. Much of the Commuter Rail Implementation Study's recommendations were incorporated into this Plan. They include the following key elements:

- Increase one-way intercity trains from 12 to 25 per day;
- Add 21 one-way commuter trains per day;
- Reinstall 24.5 miles of double track on existing single track locations;
- Increase the number of rail stations served by rail from 8 to 13;
- Have all stations incorporate high-level platforms and grade-separated pedestrian facilities;
- Improve the existing station in Windsor Locks to accommodate bus transfers from the station to Bradley Airport; and
- Revise local bus routes to provide bus service to the rail stations.

The total cost of the project is estimated to be \$480 million. The State of Connecticut has agreed to provide \$280 million in funding and the federal government has provided an additional \$161 million in funding through federal stimulus funding from the American Recovery and Reinvestment Act (ARRA) for the needed track upgrades. Together, these funding sources make up almost 80 percent of the needed funding for improvements to this rail line. Final design of the improvements was completed in 2014 and construction is now underway. Operation of the new high-speed rail system should begin in late 2016.

Springfield-Greenfield Regional Commuter Rail

Feeding into the New Haven to Springfield Commuter Rail Service mentioned above is plans for a regional commuter rail service between Springfield and Greenfield. The FRCOG has been working with the Pioneer Valley Planning Commission, local mayors, and MassDOT to bring commuter rail service to Western Massachusetts along the Knowledge Corridor. In 2013, the Massachusetts Legislature set aside \$30 million in a transportation bond bill to purchase and rehabilitate decommissioned MBTA locomotives and coach cars to use for commuter service on the Knowledge Corridor. Preliminary plans are for a service that would run six to eight times

a day between Springfield and Greenfield (potentially up to Brattleboro, VT) and feed into the New Haven-Springfield commuter service that will begin running in 2016 with an initial 12 round trips per day between those two cities. Current rough estimates for operating costs are between \$1.8 and 2 million. The next steps include securing funding for the operating costs and determining an entity to operate the service. The goal of regional leaders is to have the commuter service up and running in the next two to four years.

East-West Passenger Rail

There was once also passenger service running east-west through Franklin County with a stop in Greenfield. During the 1950s, this east-west rail line handled eight trains a day as they stopped in the county on their way between Williamstown in the west and Boston in the east. This passenger service was discontinued in the 1960s due to declining passenger demand and deteriorating track infrastructure. Currently, the closest east-west passenger rail service to Franklin County can be picked up in Palmer, West Springfield, or Fitchburg in order to travel east to Boston. There have been efforts over the last few years to expand passenger service further westward towards Greenfield.

Unfortunately, this east-west route is not part of the recent New England Vision for High Speed and Intercity Passenger Rail and has therefore not received comparable attention or funding as the north-south routes in the region. However, there is definitely a demand for east-west passenger service in Franklin County. The surveys and public outreach that were conducted as part of the update to this RTP revealed that many residents in Franklin County would like to travel to Boston via rail for employment, medical, educational, and recreational purposes. The east-west rail line is owned and maintained by PanAm Southern, which is currently working on upgrading this line, also known as the Patriot Corridor, for freight travel. This work, combined with political support from the New England Rail Vision, and funding could lead to a favorable situation in which it is possible that east-west passenger rail is restored to Franklin County. The following section describes the activities related to extending east/west rail.

Fitchburg/Gardner Activities

There are currently 13 trips inbound and outbound each weekday on the Fitchburg Commuter Rail line between the Fitchburg Intermodal Center and North Station in Boston. The Commuter Rail line is operated by the Massachusetts Bay Transportation Authority (MBTA).

Some Franklin County residents commute to the Boston metropolitan area via the Fitchburg line. One option for traveling to Fitchburg is the current G-Link bus route operated by the FRTA and the Montachusett Area Transit Authority (MART) which provides weekday bus service between Greenfield and Orange (through FRTA), with connecting service from Orange to

Gardner and the Fitchburg Intermodal Center (through MART). The FRTA portion of the G-Link is called the Route 32 bus route. However, for commuters traveling from Greenfield, the trip to Fitchburg is a long one, involving transfers between three different bus routes, and having a total estimated travel time of at least two hours given current bus schedules. After arriving in Fitchburg, commuters still need to take the train and then commute from their train stop to their final destination.

The MBTA conducted the *Fitchburg Commuter Rail Service Expansion Study* (February 2005). The study examined current conditions along the Fitchburg Commuter Rail Line and made recommendations for potential service improvements. Short-term, mid-range and long-range recommendations were proposed. A number of the proposed improvements will have positive impacts for the residents of Franklin County who currently ride, or who would like to ride, this commuter rail service to the Boston metropolitan area.

The short-range recommendations of the Fitchburg Rail Service Expansion Study included a number of station improvement projects and other changes aimed at reducing travel times, and increasing passenger comfort, service reliability, and the overall quality of the service to better meet ridership demands.

The recommended mid-range improvements continued these goals. Among the recommendations is the implementation of a new van/bus shuttle service from Gardner to the Fitchburg Station. One idea is to locate a Park and Ride lot between Fitchburg and Gardner and run shuttle service for the station to and from there.

The long-range recommendations of the study include extending commuter rail service along the Fitchburg Rail line beyond the current terminus in West Fitchburg to Gardner. In 2009, \$55.5 million in federal stimulus ARRA funding was provided for the Wachusett Commuter Rail Extension Project. This project has extended the Fitchburg Commuter rail line by 4.5 miles to a new rail station on the western border of the Town of Fitchburg near Route 2. The project also includes track improvements in Westminster to support freight and passenger rail and a new layover facility for light maintenance. It is expected that the Wachusett Station, which is soon to open, will serve an estimated 400 new commuter rail passengers beginning in Fall 2016. The location of the station near Route 2 will simplify access for commuters as they drive to the train.

Commuter rail service from Gardner to Boston previously operated on the Fitchburg Line in the early 1980s. In the 1980s, the service began with 6 round-trips to Boston each weekday. The service was reduced in 1983, and then discontinued entirely in 1984 due to inadequate

funding. The Fitchburg Commuter Rail Service Expansion Study lists a number of constraints to the expansion of the commuter rail line from Fitchburg 16 miles west to Gardner. The major factor cited is the ownership and availability of the rail line. The rail infrastructure from Boston to Fitchburg is owned by the MBTA. From Fitchburg west, Pan Am Southern owns the infrastructure, and the MBTA would need to negotiate trackage rights with Pan Am Southern to operate commuter rail service on this section. Another major factor is the need to upgrade the tracks. At the present time, half of the Fitchburg-Gardner section is single track, and would need to be at least double track to support commuter service and the continuing freight transport. In addition, there are grade issues with the track just past Westminster into Gardner that adds additional travel miles and limits speeds that make extending service into Gardner very costly for the MBTA. The study estimates the capital costs of upgrading this portion of the line and commencing the commuter service at \$50 million.

The main conclusion of the Fitchburg Commuter Rail Service Expansion Study focused on the study's short-term recommendations and the need to reduce the travel times between Fitchburg and Boston. These recommendations were addressed in the Fitchburg Line Improvement Implementation Plan completed in December 2005. The Fitchburg Line Improvement Plan identified its primary goal as reducing the trip time between Fitchburg and Porter Square in Cambridge to one hour, from the current scheduled trip time of 80 minutes during the morning peak. The Improvement Plan listed many specific steps that could be implemented to help achieve that goal.

The implementation of the mid-range and long-range recommendations is slower, yet still in progress. The new Wachusett Station is a small step in this implementation. The expansion of commuter rail service from Fitchburg to Gardner, and even in the shorter term, the creation of a Park and Ride lot and shuttle service for the Fitchburg Intermodal Center, hold promise for Franklin County commuters seeking transportation options for traveling to the Boston metro area.

The FRCOG, as the staff of the Franklin County Transportation Planning Organization, continues to include a task in its annual Unified Planning Work Program (UPWP) to provide support and to advocate for increased passenger rail service in Franklin County, and to participate in, and monitor the various studies and implementation projects that are planned or underway, as discussed in this chapter. In this task, the FRCOG works with other Metropolitan Planning Organizations and state agencies in Massachusetts, Connecticut, Vermont, and New Hampshire to initiate and support efforts to increase passenger rail service in Franklin County and New England.

Recommendations for Passenger Rail

- Continue to participate in and support the introduction of commuter rail service along the Knowledge Corridor line.
- Continue to monitor progress on the implementation of New Haven-Springfield Corridor improvements, and its implications for Franklin County, and the potential for passenger rail commuter service north of Springfield, Massachusetts.
- Continue to participate in the Northern New England Intercity Rail Initiative and support improvements which will benefit Franklin County residents and businesses as feasible.
- Continue to monitor the implementation of the recommendations of the Fitchburg Commuter Rail Service Expansion Study, particularly the recommendations which could most affect Franklin County commuters who currently, or who would like to, use commuter rail to commute to jobs in the Boston metro area.
- Work with the Montachusett Regional Planning Commission to evaluate the feasibility and costs of extending passenger service west from Fitchburg to Franklin County.
- Continue to work with the other New England States to support and assist in creating the New England high speed and intercity rail vision.

Franklin County Massachusetts

Active Rail Lines

Ownership:

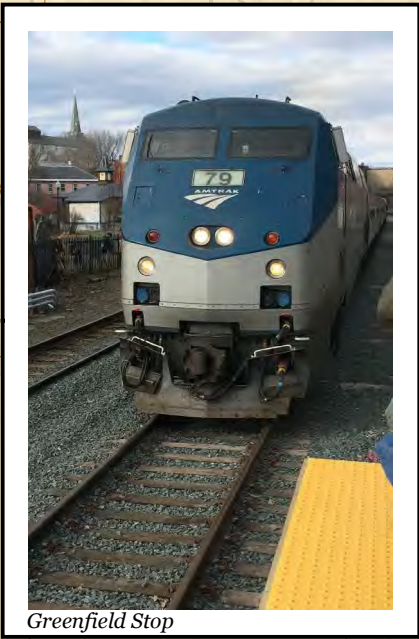
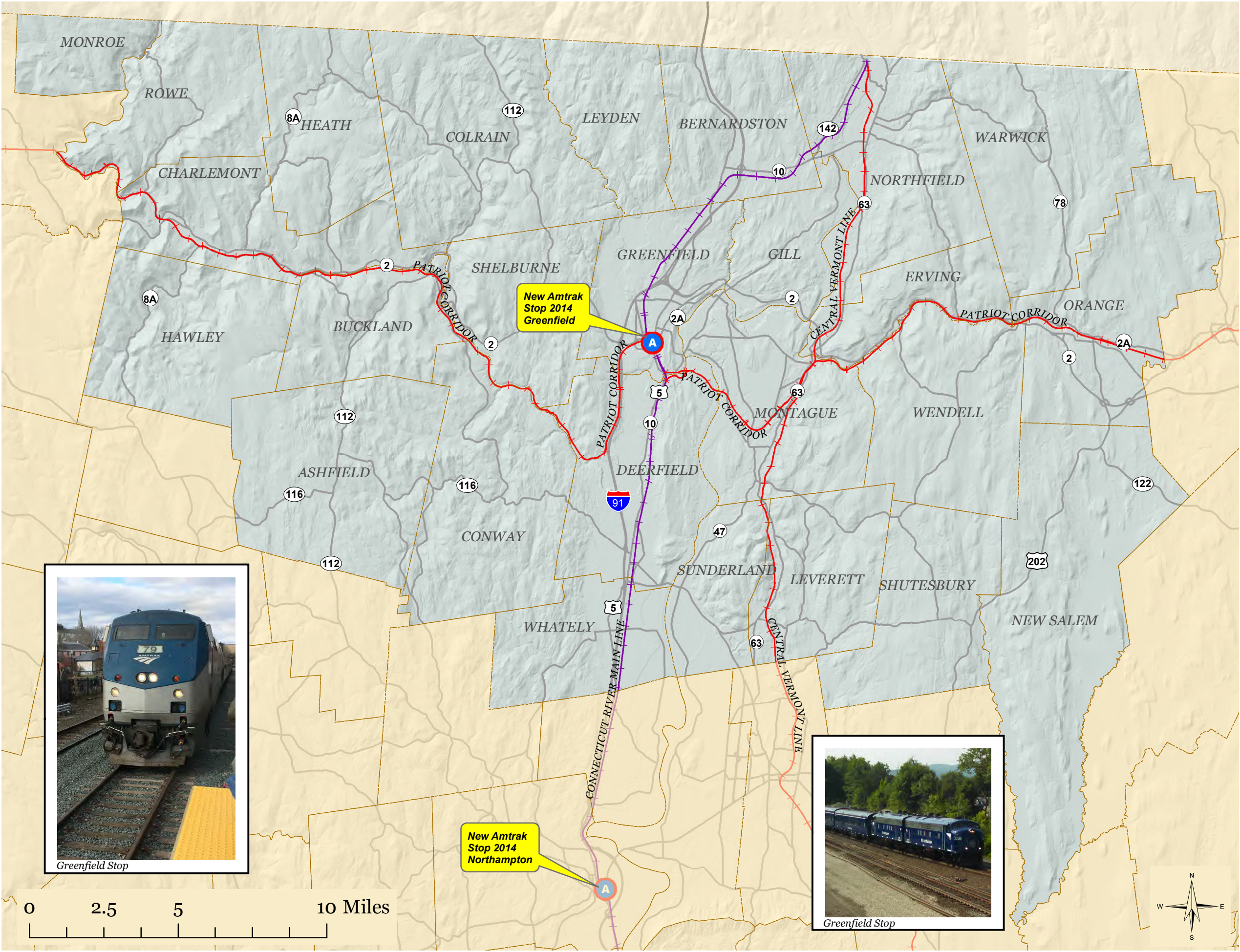
Patriot Corridor - PanAm Southern
Connecticut River
Main Line - Commonwealth of Ma.
Central Vermont Line -
New England Central Railroad

- Freight
- Freight & Passenger*

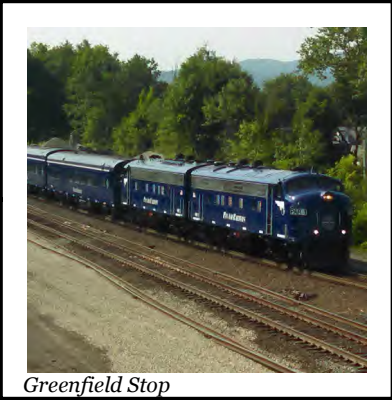
*Passenger rail operated by Amtrak (the Vermonter)



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



Greenfield Stop



Greenfield Stop

8

Airports



2016 Regional Transportation Plan

8 Airports

There are two public-use airports located in Franklin County. They are the Orange Municipal Airport in Orange and Turners Falls Airport in Montague. A map showing the locations of these airports is located at the end of this chapter. These public-use airports benefit the region in several ways. Primarily, local airports are part of a national air transportation system, which provides intermodal connections and alternatives for fast, efficient transportation of people and goods. The economic benefits of local airports include supporting existing businesses and attracting new businesses by providing convenient access to and from the area. Local airports also provide public safety services, such as emergency medical air transportation. In addition, the popularity of aviation-related recreational activities, such as parachuting, generates tourism activity that brings many visitors to the area.

According to the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems, both the Turners Falls and Orange Municipal Airports are classified as “general aviation” airports. General aviation airports provide facilities for privately owned personal and corporate aircraft, and are also used for a variety of other aviation activities, such as flight instruction, charter services, aerial agricultural spraying, aerial photography, parachuting and similar activities. Both airports are expected to remain general aviation airports in the future, and are not expected to expand into commercial airports with scheduled passenger or freight service. At the same time, neither airport is at capacity, and both airports could accommodate increased business and flight activity.

Both airports are viewed as important economic resources for their towns and for the region overall. Both airports are located adjacent to industrial parks to facilitate and promote their use by local businesses. In Turners Falls, there is the 225-acre Airport Industrial Park. In Orange, there are two industrial parks, the 57-acre Orange Industrial Park to the east of the airport and the 59-acre Randall Pond Industrial Park to the west of the airport. While both the Airport Industrial Park and Orange Industrial Park are nearly built out, the Randall Pond Industrial Park has some vacant land that can accommodate new development. In addition, areas near the Orange Airport have been identified by the Town as potential sites for future industrial and/or commercial development.

The Orange Municipal Airport and the Turners Falls Airport are each directed by an Airport Commission with the day-to-day management by an Airport Manager. Airport Commission members are appointed by the Select Board. Both airports have engaged in long-term

planning regarding improvements and expansions to their facilities and use, including activities to attract additional business.

An Airport Master Plan is a comprehensive study of a particular airport as it plans for its future growth and development. The community planning processes to create an Airport Master Plan involve coordination among the consultants preparing the plans, the Airport Commissions, municipal boards and officials, the general public, regional planning and economic development organizations, and State and Federal agencies.

Under the direction of the Airport Managers and Airport Commissions, the airports have each used a community planning process to create Airport Master Plans in the late 1990s and early 2000s. As part of the master planning process, an Airport Layout Plan (ALP) was prepared for each airport. An ALP is a detailed drawing of current and planned airport facilities. The planning process also included the creation of a Capital Improvement Plan (CIP), which is a schedule of prioritized improvement projects with their estimated costs. An airport's Capital Improvement Plan is updated annually to reflect completed projects and to prioritize future projects. As both airports are scheduled to update their Airport Master Plans in the next few years, the FRCOG anticipates actively participating in these processes as it has in the past.

Improvements that are specifically aviation-related may be eligible for funding by the FAA's Airport Improvement Program (AIP). The purpose of the AIP is to provide assistance to public-use airports across the country to maintain a safe, secure, and efficient national civil aviation system. The costs for AIP eligible projects are divided between the FAA, the Massachusetts Department of Transportation (MassDOT), and local communities. The federal cost share of these projects is 90 percent, with MassDOT and the local airport sponsor each providing 5 percent. Relevant projects eligible for the FAA's AIP funding include facilities or equipment associated with the construction or reconstruction of an airport. AIP funding is not available for routine maintenance projects. The Airport Safety and Maintenance Program (ASMP) of MassDOT provides funds for projects, such as routine maintenance, that are not eligible for AIP funding. Matching funds from the local sponsor (usually the municipality) are also required for ASMP projects. All airport improvement projects, whether AIP eligible or ASMP eligible, must be listed on a statewide Capital Improvement Plan which includes the airport specific CIPs filed with MassDOT.

The economic benefit of the airports include the direct benefits of the activities on-site at the airport (such as airport workers' salaries), indirect benefits from off-site activities attributable to the airport (such as airport worker, pilot, and passenger spending), and a

multiplier effect known as induced economic impact that results from the economic growth and activities induced by the airports' presence. A recent statewide economic impact study¹ of public use airports found that they contributed over \$16.6 billion to the Massachusetts economy in 2014, including \$6.1 billion in payroll for over 162,000 jobs. This study also estimated the annual economic impact for each public use airport. For the Turners Falls Airport, it was estimated that it resulted in 14 jobs and \$498,000 in payroll and contributed \$1,801,000 in annual economic output. The Orange Municipal Airport was estimated to result in 147 jobs and \$4,849,000 in payroll and contributed \$13,992,000 in annual economic output.

The planned improvements at the Turners Falls and Orange Municipal Airports will increase these facilities' current utility and safety, and will address the projected future aviation needs in the region. These improvements will also promote economic development by enhancing the quality of aviation facilities in the region for use by existing businesses and prospective businesses that may be seeking to locate in Franklin County. For example, some of the business growth at the industrial parks near the airports could be induced by the airports' facilities and services. The airport expansions and related business growth are not currently anticipated to generate significant levels of increased traffic on nearby roadways. However, the FRCOG will continue to monitor the impact of the airport projects on area traffic and area roadways, and to recommend improvements, if necessary, at a future date.

Orange Municipal Airport **Existing Conditions**

The Orange Municipal Airport (airport code ORE) is the largest airport in the northwestern area of the Commonwealth. Located in the Town of Orange on the eastern edge of Franklin County, the airport is surrounded by two industrial parks, one on each side, and by forest land. The airport property abuts Route 2 and its entrance is approximately two miles from this highway. As mentioned previously, the Orange Municipal Airport is classified as a general aviation airport, which provides facilities for personal and corporate aircraft, and offers a variety of aviation and aviation-related activities.

The airport was built in 1929 as the Orange-Athol Airport. During World War II, the airport was significantly upgraded for potential military use. The airport's triangular runway configuration is a remnant of this update. Currently, the airport has two active runways. The third discontinued runway is now a taxiway.

¹ Massachusetts Statewide Airport Economic Impact Study Update, Executive Summary. MassDOT Aeronautics Division. 2015.

The airport's primary runway is runway 01-19, which measures 5,000 feet long and 75 feet wide. The airport's secondary runway 14-32 measures 4,801 feet long and 75 feet wide. Both runways have an asphalt surface. Recent improvements to the condition of the pavement on the runways were completed at the Orange Municipal Airport due to a \$500,000 federal American Recovery and Reinvestment Act (ARRA) award.

The runways' lengths enable the Airport to accommodate a wider variety of aircraft than smaller airports in the greater region, such as in Turners Falls, Gardner, and Fitchburg. In addition, the Airport has both Jet and 100LL aviation fueling capability on-site, which can be an important feature for pilots choosing where to land.



**Aerial view of the Orange Municipal Airport
(Source: MassGIS)**

Current Airport tenants include two aviation maintenance facilities, flight instruction business, two flying clubs, and a prominent skydiving business, as well as non-aviation entities such as a solar power company, graphic design company, an antique gas and steam engine club, a municipal dog park, and youth recreation programs.

A good demonstration of how one aspect of the airport's use can be an economic driver for the region is the popularity of Jumptown, a parachuting club based at the Orange Municipal Airport and the site of the nation's first commercial skydiving center. In recent years, 2,000 to 3,000 people annually parachute with Jumptown. It is estimated that approximately 3% of these people are from the North Quabbin region, while the rest travel from the Berkshires, the Boston metropolitan area, New Hampshire, Vermont, Connecticut and New York, according to the Jumptown Manager. As a result, Jumptown is a major attraction for visitors coming to the North Quabbin area. Not only do these visitors pay for Jumptown's services, they may also spend money to stay, eat, and shop at local businesses.

According to the Airport Manager, nearly all the major employers in the region use the airport on a regular basis. These employers range from locally based businesses to national

corporations. In addition, the airport is also used by state and federal military and public safety agencies as well as by groups providing medical services.

The runways at the Orange Municipal Airport can accommodate virtually all types of general aviation including jet traffic operations. An “operation” is defined as a landing, takeoff, or touch-and-go procedure by an aircraft at an airport. The estimated number of annual operations at the Orange Municipal Airport for 2014 was 39,620. This is a sharp increase from 25,000 in 2009, and above the pre-recession figure of 36,000 operations in 2006. According to the Airport Manager, airports are a good barometer of the economy, the recent decrease in operations is directly related to the national financial crisis of 2008. Airports across the state reported a decrease in operations of up to 50 percent. As can be seen in the recent figures, the number of operations have steadily increased and surpassed pre-recession levels.

According to the FAA, there are different types of operations. Generally, a local operation is performed by aircraft that remain in the local traffic pattern or practice within a 20 mile radius of the airport. An itinerant operation is performed by an aircraft arriving from outside the area or leaving the airport area. Other operations include air taxi, which carries passengers or cargo for hire, as well as military and medical related operations. Table 8-1 shows the number of and type of operations conducted at the Airport in 2014.

Table 8-1: Orange Municipal Airport Operations by Type

Type of Operation	Number of Operations
Itinerant	17,000
Taxi	13,000
Local	9,000
Military	600
Medical	20

Source: Orange Municipal Airport, Annual Report, December 31, 2014.

As of 2014, the mix of aircraft using the Airport consists predominantly of single-engine airplanes (65% of the annual operations), with some small multi-engine corporate airplanes (20%), typically used for skydiving and charter activities, and large corporate aircraft (15%) such as small jets including Gates Lear Jets and Cessna Citations. Multi-engine and larger corporate aircraft use of the airport has increased over the past ten years. The number of aircraft based at the airport as of 2014 is 74, which is 23 percent more than were based in pre-recession 2006. Of the aircraft based at Orange Airport in 2014, 84 percent are single-engine, 4 percent are multi-engine, and 9 percent are ultralight aircraft.

The Airport continues to expand its capacity for aircraft on the ground. The Airport currently has 30 hangars, which is four more than in 2006, with more hangars planned. However,

increased costs to access utilities on the west side of the airport has hindered development and deterred potential business development.

Current and Future Activities

The Orange Municipal Airport has continued to enhance its facilities over the years by installing new security fencing and gates, and enhancing the pavement condition of the runways.

Future priorities include the reconstruction of Taxiway D, constructing obstruction lights, and reconstructing Runway 01-19. In addition, an Airport Master Plan Update is scheduled for federal fiscal year 2017. The original Master Plan was completed in October 2000. In the following table is the Airport's Capital Improvement Plan, which identifies the priority projects to be undertaken in the next five years (see Table 8-2).

Table 8-2: Orange Municipal Airport Capital Improvement Program

Project (with expected federal fiscal year of the start of construction)	Projected Total Cost	Federal Funding (90% of cost)	State Funding (5% of cost)	Local Funding (5% of cost)
Reconstruct Taxiway D (FFY2016)	\$1,858,000	\$1,672,200	\$92,900	\$92,900
Airport Master Plan Update (FFY2017)	\$325,000	\$292,500	\$16,250	\$16,250
Part 77 Aeronautical study for Runways 1, 19 & 32 (FFY2017)	\$255,500	\$229,500	\$12,750	\$12,750
Construct Obstruction Lights – Phase I (FFY2018)	\$870,000	\$783,000	\$43,500	\$43,500
Construct Obstruction Lights – Phase II (FFY2019)	\$1,000,000	\$900,000	\$50,000	\$50,000
Reconstruct Runway 01-19, Route 2 Tree Clearing, Gravel Access Road (FFY2020)	\$4,710,000	\$4,239,000	\$235,500	\$235,500

Note: FFY = Federal Fiscal Year (October 1st through September 30th)

Source: Orange Municipal Airport, October 2014.

Projects that are currently not in the Orange Municipal Airport's Capital Improvement Plan, but have been identified for future implementation, are the establishment of a large corporate aircraft hangar, a smaller aircraft T-hangar (with approximately eight bays), and a new Terminal Building. The construction of the Terminal Building is scheduled for 2017. This construction is part of MassDOT's five-year plan announced in May 2014 to build and renovate administration facilities at 15 general aviation airports across the Commonwealth.

For Orange, the approximately \$3 million in state funds have been obligated to construct the Terminal Building.

The Orange Municipal Airport property contains a diverse and unique mixture of grassland, farmland, and forest areas, which provide important habitats for a wide diversity of plant and animal species including a number of rare grassland birds. The Airport is well known as an important birding site in the region. The Town of Orange recognizes the wildlife value of the airport property, and has worked with the Massachusetts Natural Heritage & Endangered Species Program, to ensure that the improvement and expansion projects do not negatively impact important habitats located on the site.

The Orange Municipal Airport property also contains a portion of an aquifer Zone II recharge area. The aquifer recharge area is strictly regulated in terms of drainage, stormwater discharge, and allowed developed land uses. Airport and town officials cooperatively recognize the sensitive environmental nature of this area, and as a result, the plans for future airport expansions and construction projects leave this area undisturbed.

Since 2004, the Airport has been financially self-sufficient, and does not rely on municipal subsidies for its operation. This self-sufficiency was achieved years earlier than initially projected and reflects the skilled management and numerous projects completed to update and expand the airport's infrastructure. This has resulted in growth in use and demand for the airport's facilities and services.

With Orange located along the Route 2 corridor and within an easy drive of the Boston metro area, the Orange Municipal Airport has been able to attract a number of tenants and other airport users from eastern Massachusetts. The Orange Municipal Airport competes for potential users from eastern Massachusetts with the general aviation airports located east along Route 2 in Gardner and Fitchburg. However, the Orange Municipal Airport is the only public-use airport along the Route 2 corridor to have a 5,000-foot runway, a feature which continues to attract users and which allows it to serve a more diverse mixture of aircraft than other airports nearby.

Turners Falls Airport

Existing Conditions

The Turners Falls Airport (airport code OB5) is a general aviation airport located in the Town of Montague. The property is bordered by an industrial park, the regional vocational high school, and forest land. Interstate 91 and Route 2 are both within a close distance to the airport.

The Turners Falls Airport has one runway (Runway 16-34) and a parallel taxiway. The paved runway is 3,200 feet long and 75 feet in width, and can accommodate small single engine and multi-engine piston aircraft, and small jets such as the Cessna Citation. The runway approaches are visual. The Turners Falls Airport has a fixed base operator on-site that provides various services including maintenance, flight instruction and fuel.



**Aerial view of the Turners Falls Airport
(Source: MassGIS)**

Most of the current users of the Turners Falls Airport are recreational flyers. Students and families of students from the multiple independent boarding schools in the region use the airport to travel between school and home. There are also some business-oriented travelers. A local manufacturer has used the airport for transporting personnel back and forth between the local plant and the corporate headquarters in a nearby state. Pioneer Aviation is located adjacent to the Airport property and runs a flight school and offers services for pilots.

The Turners Falls Airport completed an Airport Master Plan in 1990. The Plan was updated in 1999. The update examined the current and projected levels of use of the airport, and concluded with recommendations to extend the existing runway and upgrade various facilities. As a follow-up to this update, a Runway & Terminal Area Study and Airport Layout Plan (ALP) Update were created by Gale Associates, Inc. for the Montague Airport Commission in 2002. The ALP proposed various improvements, some have or will be soon completed and others are not to be pursued at this time. A complete update to the Master Plan is scheduled to be undertaken in FFY2016.

The FAA defines an operation as a landing, takeoff or touch-and-go procedure by an aircraft at an airport. According to the FAA's Airport Master Record, the annual operations at the Turners Falls Municipal Airport in 2014 was approximately 17,600. However, the Airport Manager believes that this estimate may be high.

As of 2014, the mix of aircraft using the Turners Falls Airport continues to be predominantly single-engine aircraft (96%) with some multi-engine aircraft (4%). However, with planned improvements to increase the runway length and install navigational aids, the aircraft mix is expected to show a moderate shift to decrease the percentage of single-engine aircraft and increase the percentage of multi-engine, turbo and potentially jet aircraft. At the same time, however, it is unlikely that the airport will attract and maintain bulk airfreight services in the foreseeable future due to its proximity to larger airports such as Barnes Municipal Airport in Westfield, Westover Metropolitan Airport in Chicopee, and the Orange Municipal Airport in Orange.

Airport operations are currently split 71 percent local and 28 percent itinerant, with the remaining operations being taxi or for other purposes. This ratio of local and itinerant is expected to continue. The predicted mix of local and itinerant operations is an important factor in determining how much short-term parking and long-term storage of based aircraft will be needed at the airport in the future.

As of 2014, there were 33 aircraft based at the airport, which is a slight increase from recent years but still less than the number reported in 1999 (48 based aircraft). One issue in increasing the number of aircraft based at the airport has been the limited amount of hangar space. The airport currently has 8 hangars which can accommodate up to 22 aircraft.

Current and Future Activities

The capital improvement activities at the Turners Falls Airport continue to focus on implementing the recommendations of the 1999 Airport Master Plan Update and 2002 Runway & Terminal Area Study and Airport Layout Plan (ALP) Update. These recommendations addressed facility improvements, including extending the length of the runway and improving associated facilities.

The ALP was created through a community planning process guided by a Technical Advisory Committee consisting of residents, local officials, regional officials, and State agencies appointed by the Montague Airport Commission. The FRCOG participated in this planning process. The ALP update was approved by both the FAA and MassDOT, and allowed relevant projects to be eligible for FAA funding through its Airport Improvement Project (AIP). Completed improvements at the airport based on the recommendations of these plans include the construction of a new security fence along Millers Falls Road and the first phase of the runway extension which added 200 feet on the west end to total a length of 3,200 feet. Part of this first phase included installing navigational lighting and a rotating beacon.

A future, second phase extension is proposed to extend the runway by an additional 1,000 feet. This second phase is contingent on funding and designing the expansion so it avoids environmentally sensitive areas, an area of sacred Native American sites, and other areas that need to be protected.

The consultants who created the 1999 Master Plan recommended expanding the runway length and width to accommodate all aircraft in the category of B-II general aviation aircraft (30,000 pounds in weight or less) with less than ten passenger seats. Presently, the Airport can only accommodate B-I general aviation aircraft (weighing 12,500 pounds or less). There are multiple environmental conditions and aircraft characteristics that determine appropriate runway length requirements for any given aircraft. The proposed second phase of the runway extension would need to address these factors.

During the permitting process for the first phase of the airport's runway reconstruction and expansion project, areas of environmental sensitivity and archeological concern on the airport property were identified. Meetings were held with representatives of the Narragansett tribe and friends of Wissatinnewag regarding Native American relics on site. It was determined in 2008 that the Native American sites were eligible to be included on the National Register. Discussions were also conducted with State environmental officials on how to protect the grasshopper sparrow and frosted elfin butterfly habitats that were found. Any proposed reconstruction and expansion of the runway will need to take these environmental and archeological factors into consideration so that the project avoids impacting these areas.

Additional recommended improvements in the ALP included work on the runway's associated taxi lanes and taxiways, upgrades to the runway approach, improvements to the apron, as well as perimeter fencing and other security recommendations. Many of the improvements recommended in the ALP have been implemented while some are in process or have been found not to be needed.

Recommendations completed in recent years include the acquisition of private property in the Runway 34 approach, improvements to the apron, and an extension of the runway by 200 feet. By the end of 2015, work will be completed to shift and extend the taxiway, so that it ties in to the runway closer to the ends and will be in compliance with its distance from the centerline.

Future planned projects are outlined in the airport's Capital Improvement Plan (see Table 8-3). These projects include the proposed extension of the runway by 1,000 feet, and the necessary archeological and tribal investigation, design and permitting with the project. Other major projects include Terminal Building improvements and perimeter fencing. As the state announced in 2014, a program to improve administration facilities at general aviation airports across the Commonwealth, an expanded Terminal building at the Turners Falls Airport has been proposed. Funding still needs to be secured and a timeframe confirmed for this project. The Airport Manager is also exploring options to use underutilized areas of the property for revenue generation, so as to help the airport become more self sufficient. Project such as these or other additional projects may be identified as a Master Plan update is scheduled to be undertaken in FFY2016, which will look at the improvements that have been completed in recent years and identify what is needed in the future.

Airport Security

Since September 11, 2001, greater attention has focused on security at the nation's major airports. In Massachusetts, attention on airport security has included the state's smaller, general aviation airports as well. MassDOT oversees and regulates the 39 public-use airports in Massachusetts, including the Massachusetts Port Authority (MassPort) oversight of the Boston Logan International Airport, Laurence G. Hanscom Field, and Worcester

Table 8-3: Turners Falls Airport Capital Improvement Program

Project (with expected federal fiscal year of the start of construction)	Projected Total Cost	Federal Funding (90% of cost)	State Funding (5% of cost)	Local Funding (5% of cost)
Airport Master Plan Update (FFY2016)	\$300,000	\$270,000	\$22,500	\$7,500
Terminal Building Upgrade (FFY2017)	N/A	N/A	N/A	N/A
Archeological & Tribal Investigation for Runway Extension (FFY2017)	\$240,000	\$216,000	\$12,000	\$12,000
Design & Permitting for Runway Extension (FFY2018)	\$600,000	\$540,000	\$30,000	\$30,000
Extend Runway 1000' (FFY2019)	\$4,500,000	\$4,050,000	\$225,000	\$225,000
Relocate Access Road (FFY2019)	\$300,000	\$270,000	\$15,000	\$15,000
Property Acquisition (FFY2020)	\$550,000	\$495,000	\$27,500	\$27,500
Perimeter Fencing Phase II (FFY2021)	\$950,000	\$855,000	\$47,500	\$47,500
Install Automated Weather Observation Station (FFY2022)	\$600,000	\$540,000	\$30,000	\$30,000

Note: FFY = Federal Fiscal Year (October 1st through September 30th), N/A = Not Available

Source: Turners Falls Airport, October 2014.

Regional Airport. As noted previously, the two public-use airports in Franklin County are the Orange Municipal Airport in Orange and the Turners Falls Airport in Montague.

Since 2001, MassDOT established a number of policies and programs to increase airport security. MassDOT funded security enhancements at municipal airports including security fencing, access control systems, and video monitoring. MassDOT also implemented a statewide badge program for aircraft users and airport tenants, and all badges have been entered into centralized state database. Additionally, MassDOT requires each public-use airport to develop and implement an airport security plan, and that the plan be consistent with MassDOT security guidelines and regulations.

Both the Orange Municipal Airport and the Turners Falls Airport have created airport security plans for their facilities. They have both implemented the use of badges for aircraft users, and made security improvements onsite, including new perimeter fencing and gates at vehicle access points. Additional security measures undertaken at the Orange Municipal Airport include:

- Improved lighting in high security areas;
- Airport staff meets regularly with local law enforcement officials to discuss airport security issues; and
- Local police increased the number of patrols to the airport during the day and evening.

Recommendations

- Complete short-term projects (within 0-3 years) which are included in the Orange Municipal Airport's Capital Improvement Plan (CIP) or programmed for implementation, such as the reconstruction of a Taxiway D and complete the Airport Master Plan Update and Part 77 Aeronautical Study, as well as the construction of a new Terminal Building.
- Implement mid-term projects (within 4-6 years) which are included in the Orange Municipal Airport's CIP, such as the construction of obstruction lights.
- Continue pursuing long-term (beyond 6 years) improvements at the Orange Municipal Airport, including the reconstruction of Runway 01-19, Route 2 tree clearing and gravel access road.
- Complete short-term projects in the Turners Falls Airport's CIP, such as completion of taxiway improvements and completion of the Airport Master Plan Update.
- Implement mid-term projects (within 4-6 years) which are included in the Turners Falls Airport's CIP, such as the archeological and tribal investigation, design and

permitting and construction for the proposed 1,000 foot runway extension, and the relocation of the access road.

- Continue pursuing long-term improvement projects at the Turners Falls Airport, such as the property acquisition, Phase II of perimeter fencing and the installation of an automated weather observation station.
- Completion of Airport Master Plan Updates and continued review and updating of the Capital Improvement Plans for the Turners Falls and Orange Municipal Airports as necessary to reflect changing airport conditions, updated funding and cost figures, and revised project timetables.
- Continue promoting the expansion of activities and facilities at the Turners Falls Airport and Orange Municipal Airport, within the framework of the airports' plans, that will help promote and sustain the airports' financial self-sufficiency, and that will serve regional business interests and support economic development in the region.



View of Franklin County from an airplane.

Franklin County Massachusetts

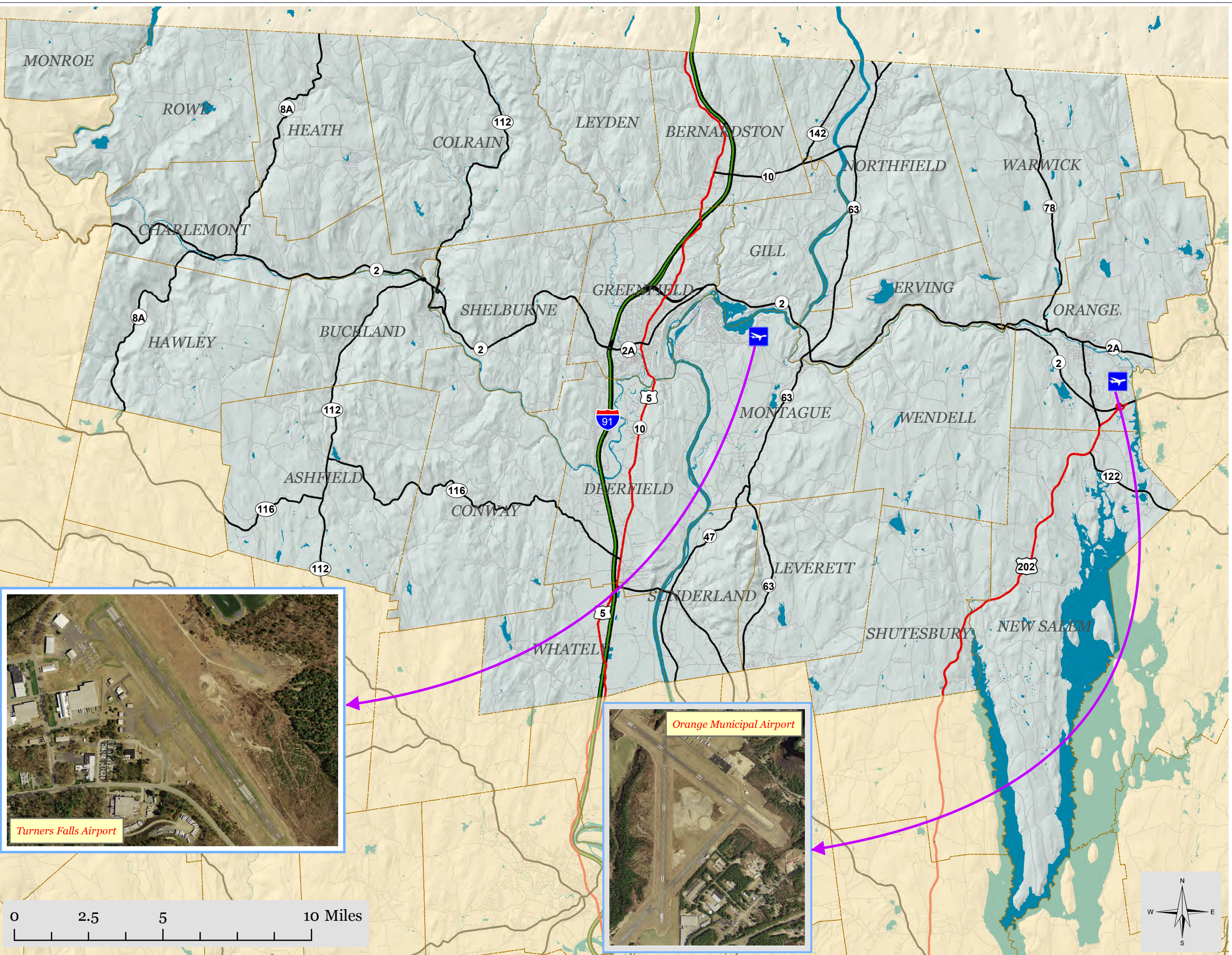
Airports

	Orange Municipal	
Runway:	01-19	14-32
- Dimensions (feet)	5,000 x 75	4,801 x 75
Annual Operations:	33,025	
Aircraft Operations Mix:		
- Single-engine	65%	
- Multi-engine	20%	
- Small jet	15%	
Based Aircraft:	74	
Source: Orange Municipal Airport Manager, 2015		

	Turners Falls Airport
Runway:	16-34
- Dimensions (feet)	3,200 x 75
Annual Operations:	17,600
Aircraft Operations Mix:	
- Single-engine	96%
- Multi-engine	4%
- Small jet	0%
Based Aircraft:	30
Source: Turners Falls Airport Manager, 2015	



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



9

Transit & Paratransit Services



2016 Regional Transportation Plan

9 Transit and Paratransit Services

Because Franklin County is the most rural region in Massachusetts, it is difficult to effectively meet residents' transportation needs through fixed transit routes. The consequence is a limited public transit network and a region that is heavily dependent upon the personal automobile. This can be challenging for the estimated seven percent of households in Franklin County that do not have access to a vehicle, or those who are limited in their driving, such as the elderly.

Despite the vast geographic area of the county and its rural character, there is a growing demand for increased public transit options. Through public outreach conducted during the development of this Regional Transportation Plan (RTP), as well as outreach conducted for other transit-related projects in the county, it is clear that there is a strong desire and need for increased and improved transit services in the region. By far, the most common and frequent comment received about transportation in the region is for expanded bus service.

The parts of the region with the best transit access and more service are typically located in the larger town centers and downtown areas that have the highest population densities, such as: Greenfield, Turners Falls, Sunderland, Deerfield, and Orange. Sparsely populated areas have less transit access due to the higher cost of providing services to a more dispersed population with limited funds. A lack of secure long-term funding is a critical challenge to providing public transit in Franklin County. One of the most popular bus routes in the region, Route 32, has no secure long-term funding.

The role of the FRCOG in the context of regional public transit access is to work with the regional transit agencies and MassDOT to help with the following tasks:

- 1) provide the best transit services possible;
- 2) expand existing services to meet resident and worker needs as feasible;
- and 3) ensure that transit planning and programming activities in Franklin County are consistent with the principles of MassDOT's transportation vision, as clarified in its *YouMove* planning initiative.



FRTA Bus at the John W. Oliver Transit Center

The Franklin Regional Transit Authority (FRTA) provides the majority of public transit services to Franklin County with some services provided by the Pioneer Valley Transit Authority (PVTA). A total of eight fixed bus routes currently operate within Franklin County. All the towns in Franklin County except for Monroe, Sunderland, and Leverett are members of the FRTA. Sunderland and Leverett are members of the PVTA. Additionally, both the FRTA and PVTA provide paratransit and demand response service to their respective towns with the level of the service varying significantly by community. A map of the service areas for the FRTA is contained at the end of this chapter.

Fixed Route Transit Services

Fixed route transit service in Franklin County is provided by the FRTA and the PVTA. The FRTA operates seven of the fixed service routes in Franklin County, including the Corporate Shuttle. The PVTA operates two fixed service routes which travel through the Franklin County communities of Sunderland and Deerfield. Transit routes operated by the FRTA are limited to weekdays and non-holidays, while one of the two routes operated by the PVTA operates also on Saturdays. The PVTA does not operate on major holidays, but does run on reduced schedules for minor holidays.

Franklin Regional Transit Authority (FRTA)

The FRTA is the primary transit agency for Franklin County. The FRTA's service territory extends into Hampshire, Hampden, and Worcester Counties. The FRTA serves the most rural and geographically largest area of all the Regional Transit Authorities (RTAs) in Massachusetts. The service area comprises a total of 41 towns and includes 23 towns in Franklin County and extends south to Blandford and Southwick in Hampden County, west to Middlefield in Hampshire County, and east to Petersham in Worcester County.

The FRTA, like other RTAs, is funded from a combination of federal, state, and local funding sources as well as from revenue generated from fares. Each of the towns that are serviced by the FRTA pays a local assessment. This amount is based on: the



**John W. Oliver Transit Center in Greenfield
(Credit: John Linden)**

number of one-way trips associated with demand response transportation in the town and the number of vehicle revenue miles of fixed route service in each town.

The FRTA presently has 42 transit vehicles in total, which includes 7 buses, 10 minibuses, and 25 vans, all of which are wheelchair accessible, and four service vehicles. All of the buses used for fixed route service have bicycle racks on the front of the buses. The bicycle racks hold two to three bicycles each and are on the buses year-round. The FRTA operates out of the newly constructed John W. Olver Transit Center located in downtown Greenfield. The JWO Transit Center is the first zero net energy transit center in the nation and houses the administrative offices of the FRTA and the FRCOG. It is located adjacent to an Amtrak-operated passenger rail line and accommodates intercity bus service. All of the fixed transit routes originate out of the JWO Transit Center. The building provides passenger amenities including rest rooms, indoor waiting area, a small café, WiFi service, and bicycle parking.

Table 9-1: FRTA Routes and Route Frequency

Route	Primary Destination(s) from Downtown Greenfield	Number of Round-Trips on Weekdays	Fare (One-way)
21	Greenfield	9	\$1.00
22	Montague	8	\$1.00
23	Amherst	2	\$3.00
31	Northampton	6	\$1.50
32	Orange	7	\$1.50
41	Charlemont	4	\$1.50
Corp	Corporate Center Shuttle	5	\$1.00

Table 9-1 outlines current FRTA bus route schedules, frequency, and fare schedule. Bus fares for FRTA fixed route service currently ranges from \$1.00 to \$3.00. Passengers with valid Statewide Access Passes, ADA cards, Medicare cards, and persons over 60 years old ride for half of the listed fare. Passengers with a valid MA Commission for Blind card, FRTA Veteran's photo ID card, or a valid Department of Veteran's Affairs photo ID card ride for free. Children under the age of five ride free when accompanied by a fare-paying adult. In June of 2010, the FRTA installed electronic fareboxes on all fixed route transit buses. These fareboxes are intended to make riding the bus easier and more convenient by allowing riders to purchase a magnetic fare ticket that can be used for multiple rides. Additionally, the electronic fareboxes also accept cash. In 2013, the FRTA installed RouteMatch System technology so that passengers can track buses in real time using their phones or the internet.

FRTA's annual ridership saw a decline between Fiscal Year (FY) 2012 and FY 2014. Ridership declined slightly between 2012 and 2013 and then dropped more significantly between 2013 and 2014. This latter reduction in ridership can be mostly explained by the fact that during this time the Town of Athol switched to the MART service area away from the FRTA's. Since 2014, the fixed route ridership may be showing an increase. The first quarter of FY 2015 showed a 55% increase (17,219 additional riders) when compared to the first quarter of FY 2014 (July through September). Table 9-2 shows the annual ridership rates for the FRTA routes for the fiscal years (FY) 2012 to 2014.

Table 9-2: FRTA Ridership Statistics, FY 2012 to FY 2014

Route	Annual Ridership FY 2012	Annual Ridership FY 2013	Annual Ridership FY 2014	Percent Change from FY 2012 to FY 2014
Route 21 (Greenfield)	27,306	27,923	29,422	+7.75%
Route 22 (Montague)	25,771	25,875	25,277	-1.92%
Route 23 (Amherst)	5,242	5,088	2,772	-47.12%
Route 31 (Northampton)	30,316	33,163	31,480	+3.84%
Route 32 (Orange)	39,132	35,029	24,953	-36.23%
Route 41 (Charlemont)	9,616	8,130	8,176	-14.97%
Total	137,383	135,208	122,080	-11.14%

Source: Franklin Regional Transit Authority, April 2015.

FRTA Fixed Route Descriptions

Route 21: Greenfield Community Route

Route 21 (Greenfield Community Route) traverses around Greenfield, reaching the majority of Greenfield's primary shopping destinations and high density residential areas. Some major destinations in downtown Greenfield include: the Franklin Medical Center, Cherry Rum Plaza, Greenfield High School, Leyden Woods, Greenfield Community College (GCC), the Big Y/Home Depot shopping centers, and the Greenfield Corporate Center. The one-way fare for this route is \$1.00 and the entire route takes approximately one hour and fifteen minutes roundtrip. The schedule for this route consists of nine runs per day with the earliest run leaving the JWO Transit Center at 8:00 A.M. and the latest leaving at 6:00 P.M.

Route 22: Montague/Greenfield Route

Route 22 (Montague/Greenfield Route) provides service between the communities of Greenfield and Turners Falls, with limited service also provided to Montague Center and Millers Falls. Route 22 begins at the JWO Transit Center in Greenfield and travels to major

stops that include Farren Care Center, Turners Falls High School, and Turners Falls Industrial Park. The schedule for this route currently consists of eight runs per day with the earliest run leaving JWO at 6:15 A.M. and the latest leaving at 6:30 P.M. Of these eight runs, three provide additional service to Millers Falls and Montague Center.

Route 23: Amherst/ Greenfield Route

Route 23 (Amherst/Greenfield Route) connects Greenfield to the University of Massachusetts Amherst campus, via Turners Falls, Millers Falls, and Montague Center. The schedule for this route currently consists of two round-trip runs per day with the first run leaving the JWO Transit Center at 6:45 A.M. and the last leaving at 3:05 P.M. This route has the lowest ridership levels of the FRTA system.

Route 31: Northampton/Greenfield Route

Route 31 (Northampton/Greenfield Route) connects the communities of Greenfield, Deerfield, Whately, Hatfield, and Northampton. Starting at the JWO Transit Center in Greenfield, Route 31 travels to Deerfield where its stops include Frontier High School, South Deerfield Center, and Deerfield Industrial Park. After stopping in Deerfield, Route 31 proceeds on to Whately, with a stop at the newly constructed MassDOT Park & Ride, and continues on to Northampton, stopping at the Big Y/Wal-Mart Plaza and the Academy of Music. The one-way fare for this route is \$1.50 and the entire route takes approximately an hour and a half roundtrip. The schedule for this route currently consists of six round-trip runs per day with the earliest run leaving Court Square at 5:15 A.M. and the latest leaving at 5:15 P.M. This route connects with a PVRTA route. This route was the most popular route in FY 2014 with 31,480 riders.

Route 32: Orange/Greenfield Route

Route 32 (Orange/Greenfield Route) serves to connect several communities along Route 2 east, from Greenfield to Orange. Route 32 also connects major destinations for users, including: the Franklin Medical Center, the Orange Health Center, and the Wal-Mart and Hannafords Shopping Centers. The one-way fare for this route is \$1.50 and the entire route takes approximately two hours roundtrip. The schedule for this route currently consists of seven round-trip runs per day with the earliest run leaving the JWO Transit Center at 5:00 A.M. and the latest leaving at 5:15 P.M.

This route started as the G-Link Route in October in 1999 and was the result of a joint collaboration between the FRTA, FRCOG, and the Montachusett Regional Transit Authority (MART) to improve access to jobs. The entire G-Link service operates between Greenfield and Gardner, with connections to Fitchburg and to the commuter rail line running between Fitchburg and Boston. The FRTA runs the western portion of the service, now called Route

32, and MART runs the eastern portion of the service and the connecting bus service to Fitchburg. The two RTAs connect at the Hannafords in Athol for passengers to transfer.

Route 41: Charlemont/Greenfield Route

Route 41 (Charlemont/Greenfield Route) primarily serves western Franklin County, connecting the communities of Greenfield to Shelburne, Buckland, and Charlemont with four runs per day. Route 41 starts at the JWO Transit Center in Greenfield and travels along Route 2 towards Shelburne Falls. After Shelburne Falls, Route 41 either travels to Mohawk High School (the first route of the day) or to the Charlemont Park and Ride lot (the remaining runs). The other stops include the Academy at Charlemont and Charlemont Center. The earliest run departs JWO at 6:45 A.M. with the latest run departing at 4:45 P.M. The one-way fare for this route is \$1.50 and the entire route takes approximately two hours roundtrip.

The Pioneer Valley Transit Authority (PVTA)

The Pioneer Valley Transit Authority (PVTA) is based in Springfield, Massachusetts and is the regional transit authority for the Pioneer Valley. The PVTA is the largest regional transit authority in Massachusetts with a fleet of 174 buses and 144 vans. The PVTA has 24 member towns in Hampshire, Hampden, and Franklin Counties and provides fixed-service bus routes as well as demand-response services for the elderly and disabled.

The PVTA operates two main transit routes in Franklin County: Route 31 (Sunderland/South Amherst) and Route 46 (South Deerfield/Whately Park & Ride/UMass). Route 31 connects the UMass campus to Sunderland Center with multiple stops on the route. Route 46 links the UMass campus to South Deerfield Center as well as several stops along the way. The fare for both of these routes is \$1.25 for a one-way ticket, although students, faculty and staff of the Five Colleges ride for free.

PVTA Fixed Route Descriptions

The following section is a detailed description of the PVTA routes that run within Franklin County. Table 9-3 summarizes the PVTA routes that serve Franklin County.

Table 9-3: PVRTA Routes to Franklin County and Route Frequency

Route	Schedule	Number of Round-Trips on Weekdays	Number of Round-Trips on Saturday	Number of Round-Trips on Sunday	Typical Weekday Peak Frequency
Route 31 (Sunderland/South Amherst)	Regular	55	17	12	15 minutes
Route 46 (South Deerfield/Whately Park & Ride/UMass)	Regular	6	N/A	N/A	Irregular

Note: PVRTA runs a reduced schedule when UMass is not in session.

Route 31: Sunderland/South Amherst

Route 31 provides transit services between the communities of South Amherst and Sunderland. Route 31 operates from 7:22 A.M. until at least midnight every night, with service extending to 1:00 A.M. on Thursdays, Fridays and Sundays, and to 2:00 A.M. on Saturdays. Route 31 is traditionally the PVRTA route with the highest ridership. In 2013, Route 31 carried approximately 5,114 daily passengers. This is the third highest of weekday routes in the PVRTA system. Route 31 also has an average of 67 riders per trip, which is more than any other PVRTA route. While its ridership is very high, Route 31 is also greatly dependent upon the academic schedule, which decreases significantly when UMass is not in session. As a result, PVRTA runs a reduced schedule during these times.

Route 46: South Deerfield/Whately Park & Ride/UMass

Transit service between South Deerfield and UMass is provided by Route 46. This route includes a stop at the Whately Park and Ride. Route 46 operates from 7:00 A.M. until 10:30 P.M. on Monday through Friday. There is no weekend service on this route. In 2013, Route 46 carried 111 passengers per weekday, which is the fourth lowest ridership of any PVRTA route. The PVRTA also runs a reduced schedule for this route when UMass is not in session.

ADA Paratransit Transit and Demand Response Services

The FRTA and PVRTA each offer paratransit and demand response services, sometimes referred to as dial-a-ride van transportation, to elderly and disabled residents in their member communities. In all Franklin County communities, transportation through the FRTA or PVRTA is available for seniors age 60 and over and for some people with disabilities that affect their ability to drive and use regular fixed-route transit service. All of the PVRTA and FRTA buses and vans are wheelchair accessible. Priority for service is given to people with disabilities and seniors and for essential purposes, such as medical care.

Under the American with Disabilities Act (ADA) of 1990, paratransit services must be provided in all areas with local fixed route bus services for people who can't use the local bus system due to their disability. The ADA seeks to provide people with disabilities the same access to public transportation as people without disabilities. The FRTA's Paratransit Services are for disabled individuals who are available within three-quarters ($\frac{3}{4}$) mile of a fixed route corridor and cannot navigate or access the provided fixed route service due to their disability.

There are several limitations to ADA transportation services in Franklin County, largely a result of its rural nature. Large land area and low population density are the primary factors for the county's limited fixed-route transit services and as a result, there are no requirements to provide ADA transportation services for at least half of Franklin County towns, due to the lack of fixed bus route service in the region. Much of the van service which is provided in Franklin County is, therefore, demand response service, which is optional and offered at the regional transit authorities' discretion. For the towns with fixed-route transit services, ADA service is available to qualifying residents during the regular route's hours of operation.

The FRTA and PVRTA each contract with local private van companies to provide both the mandated ADA paratransit service and optional demand response service within their regions. For the FRTA, many of the providers are local Councils on Aging (COAs) that also offer other services to seniors. Franklin Transit Management (the operating company for the FRTA) provides the ADA service. Table 9-4 summarizes the paratransit/demand response service that is available by town in Franklin County.

Table 9-4: Paratransit Service in Franklin County			
Town	Paratransit Service	Demand Response Service Provider	MedRide Service Provider
Ashfield	No	Shelburne COA	FRTA
Bernardston	No	Bernardston COA	FRTA
Buckland	Yes ¹	Shelburne COA	FRTA
Charlemont	Yes ¹	Shelburne COA	FRTA
Colrain	No	Shelburne COA	FRTA
Conway	No	Shelburne COA	FRTA
Deerfield	Yes ¹	FTM	FRTA
Erving	Yes ¹	Erving COA	FRTA
Gill	Yes ¹	FTM	FRTA
Greenfield	Yes ¹	FTM	FRTA
Hawley	No	Shelburne COA	FRTA

Town	Paratransit Service	Demand Response Service Provider	MedRide Service Provider
Heath	No	Shelburne COA	FRTA
Leverett	Yes	Amherst COA	FRTA
Leyden	No	No	FRTA
Monroe	No	No	No
Montague	Yes ¹	FTM	FRTA
New Salem	No	Orange COA	FRTA
Northfield	No	Bernardston COA	FRTA
Orange	Yes ¹	Orange COA	FRTA
Rowe	No	Shelburne COA	FRTA
Shelburne	Yes ¹	Shelburne COA	FRTA
Shutesbury	No	No	FRTA
Sunderland	Yes ¹	Hulmes Transportation	No
Warwick	No	Orange COA	FRTA
Wendell	Yes	Orange COA	FRTA
Whately	Yes ¹	FTM	FRTA

Notes:

1: ADA Paratransit services are provided for disabled individuals who are available within $\frac{3}{4}$ mile of a fixed FRTA route corridor and cannot navigate or access a regular fixed route due to their disability.

Sources: Information was obtained from the Franklin County Home Care Corporation, FRTA, and PVTa.

Human Service Transportation

Additional transportation services, such as van transportation, are offered to qualifying Franklin County residents through the Department of Developmental Services (DDS), Department of Public Health (DPH), and the Division of Medical Assistance (DMA), as well as other various state-level human service agencies. Regional transit authorities arrange transportation by request for elders and disabled residents in the area through a network of public and private transportation providers. The travel that can be funded through these programs is often limited to a few specific types of trips, such as medical trips or transportation to job training. Regional transit authorities generally coordinate the transportation services for the State's human service agencies. Transportation services for MassHealth, DMA, and DPH in Franklin County are currently coordinated by the FRTA and provided by private transportation operators.

Community Transit Services

Community Transit Services (CTS) was a major private transportation provider in the region. It was established in 1998 to provide transportation for work communities in the Athol-Orange areas and to help improve access to jobs for low-income individuals. However, in 2013 the funding for the program was cut and its service was folded into the Montachusett

Regional Transit Authority (MART) as a reduced dial-a-ride service for the Orange/Athol area. The discontinuation of this curb-to-curb public transportation service for the Northern Tier region along Route 2 is a major loss to the low income and other transit-reliant households.

Private Carriers and Other Transportation Services

Bus Service

Peter Pan Bus Lines and Greyhound Lines jointly operate service to Franklin County with two trips to Greenfield and Deerfield each day. The Greenfield station is located at the John W. Olver Transit Center and the Deerfield stop is located at Savage Market on Route 5/10. Passengers can switch buses in Amherst and Springfield for other destinations, including: Worcester, Framingham, Boston, and points in Connecticut and New York.

Taxi Service

There is currently only one cab company in the Greenfield area, About Town Taxi (none of their vehicles are handicapped accessible). There are also a few other cab companies based in towns close to the region and provide service to some Franklin County towns, such as Athol Taxi in Athol. Taxi companies also operate from Gardner to the east; North Adams to the west; Winchester, New Hampshire to the north; and Northampton and Amherst to the south.

Other Private Services

There are several limousine services in Franklin County. There are a larger number of van and charter bus services based in Franklin County. One of the largest bus services in the county is F.M. Kuzmeskus, Inc, which is based in the Town of Gill.

Public Transit Coordination

Regional Coordinating Councils

In 2012, Massachusetts established a Statewide Coordinating Council on Community Transportation with the objective of coordinating public transit services and human services throughout state. As part of this effort, Regional Coordinating Councils (RCCs) were established throughout the Commonwealth in 2014 – including a Franklin County RCC. The Franklin County RCC is composed of human service providers throughout Franklin County and the North Quabbin Region and meets bimonthly in conjunction with the FRTA Transit Advisory Committee. In 2015, the RCC created a Franklin Regional Transportation Inventory of all transportation services offered in Franklin County. The inventory also includes information about the cost, eligibility, and service area of all the transportation providers. The goal of the RCC is to finalize the inventory and distribute it to all human service providers in the region to better assist the needs of their clients. The inventory also provides

an excellent basis for transportation coordination in the region as it highlights the overlaps and gaps in service that currently exist. The inventory can be found at the end of this chapter.

Coordinated Public Transit-Human Services Transportation Plan

The FRCOG has created a “Coordinated Public Transit-Human Services Transportation Plan for Franklin County” that identifies transportation providers in the region and key public transit service gaps in Franklin County. In 2014, the FRCOG identified the following transportation needs:

- Implementing additional fixed transit routes to allow access to employment, education, and services;
- Implementing more frequent fixed route service to accommodate passengers’ needs to move between employment, childcare, and services in a timely manner;
- Implementing more evening transit service to allow access to employment, education, and services;
- Beginning weekend transit service to allow access to employment, education, and services;
- Improving connectivity between transportation providers serving Franklin County so that users can more easily transfer and move from Point A to Point B as efficiently as possible;
- Creating better links between transportation modes;
- Providing transportation services to residents located in the more rural areas of Franklin County far from fixed transit routes;
- Marketing of existing transportation services;
- Continuing the maintenance of vehicles at or above a state of good repair; and
- Acquiring modern accessible service equipment and technical applications.

Current Activities and Future Plans

The FRCOG is committed to working to ensure that all Franklin County residents have access to transportation facilities and services. To do so, FRCOG coordinates with the FRTA to explore ways to improve the region’s bus system and work specifically to support better access to jobs, training, and needed services for low-income residents.

Comprehensive Service Analysis

The FRTA is currently completing a Comprehensive Service Analysis (CSA) that examines the existing fixed route system and makes recommendations for improvement. The final CSA and its recommendations are due to the state legislature by June 30, 2015. At the beginning of the CSA planning process, the FRCOG partnered with the FRTA to conduct extensive public outreach in Franklin County to better understand the transit needs of the public. The outreach and its findings are summarized in the FRCOG report, “*Summary of*

Public Input Gathered at FRTA Community Conversations” (June 2014). Overall, it was very clear that the region wants:

- More frequent bus service;
- Extended weekly hours (specifically evening service); and
- Weekend service (specifically Saturday service).

Recommendations for Transit and Paratransit Services

Short Term Recommendations

- Promote current paratransit and demand response services among elder and disabled residents who could benefit most from these services.
- Promote the Park and Ride lots in the region as a way to bolster bus ridership.
- Coordinate between the FRTA and the PVTA to investigate options for improved connections between the two regions.
- Work with major employers and industrial parks in the region to better understand various shift times and possible service to these locations.

Long Term Recommendations

- Continue to work with the FRTA, PVTA, and the MART to keep area legislators informed about the regional importance of Route 32 and about the demand for expanding the routes to include additional runs and evening and weekend service to better assist residents with access to employment, education, and training opportunities. Importantly, work to obtain permanent funding for Route 32.
- Improve connections between Franklin County and UMass Amherst, the region's largest employer.
- Consider ways FRTA could coordinate with GCC, FCHREB, and CDC to create a workforce development-focused shuttle. One example is exploring the feasibility of contributions from GCC toward the cost of fixed route service by way of students' fees being charged as part of the tuition.
- Consider extensions of the fixed route system to serve the West County (Rt. 116) and North County (Rt. 5/10) regions.

Ongoing Recommendations

- Support the reinstatement of evening and weekend transit services to meet transit rider demand.

- Continue to work with the regional transit authorities and other transportation providers to: monitor and evaluate routes; to address unmet transportation needs and current problems with connectivity between routes and inter-regional service connections.
- Expand current outreach and publicity efforts to provide information about FRTA transit services and to encourage bus usage. Outreach efforts should target the populations who are most likely to use transit services and to need transit assistance, such as low-income residents, disabled residents, and the elderly. Outreach efforts should also focus on the general workforce commuters.
- Support the provision of paratransit and demand response services for elderly residents and riders with disabilities, and work to expand van transportation availability, especially in areas with less than daily services and as the elderly population in the region grows.
- Conduct outreach with the communities within the FRTA service area about the fiscal costs associated with services and how best to match their level of need with financial concerns.



Riders waiting to board a FRTA bus at the John W. Olver Transit Center.

Franklin County Massachusetts

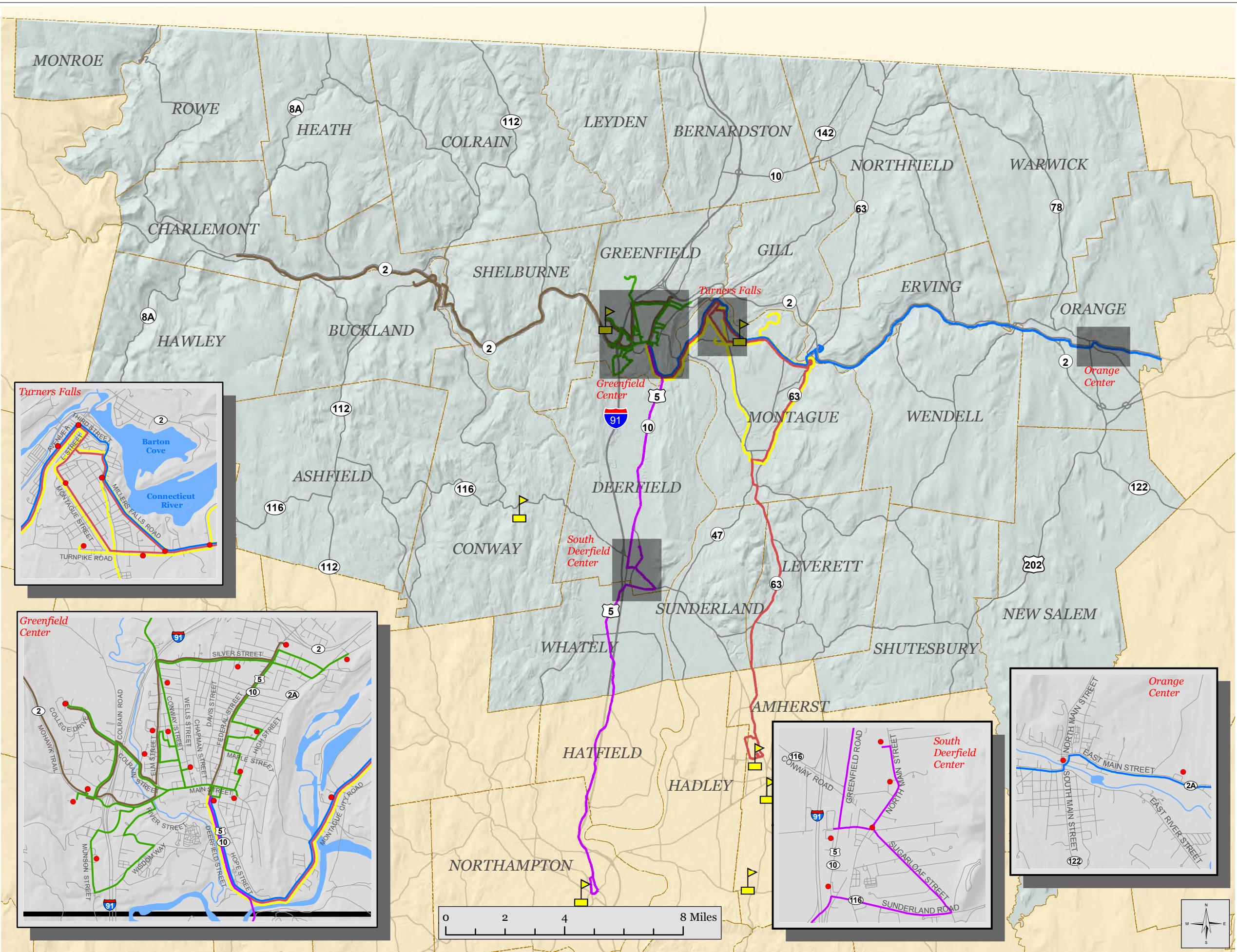
Transit Routes

- Route 21
- Route 22
- Route 23
- Route 31
- Route 32
- Route 41
- Transit Stop
- College
- Major Road
- Town Boundary

Franklin Regional
Council of Governments



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



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Livability: Bicycle & Pedestrian Facilities



2016 Regional Transportation Plan

10 Livability: Bicycle & Pedestrian Facilities

Bicycling and walking are integral components of the transportation system in Franklin County. This has been reinforced by the completion of a number of planning documents and projects for the region. These varied planning projects include tasks that outline future bicycle and pedestrian infrastructure projects; incorporate initiatives for promoting healthy transportation options; and assess potential improvements that could be incorporated into existing infrastructure projects to better accommodate bicycling, walking and complete streets. The plans include:

- A Safe Routes to School (SRTS) evaluation (2011);
- A Regional Complete Streets Project (2012);
- Updated Franklin County Bikeway maps (2013 update);
- A Regional Complete Streets Plan Part 2 (2014);
- A Tri-state Connecticut River Scenic Byway Bikeway map (2014);
- A Feasibility Study of Potential for Rail with Trail along the Connecticut River Main Line (2014); and
- An Alternative Transportation Map (2014).

Planning for bicycling and walking facility improvements are also routinely incorporated into local and regional plans completed by the FRCOG, such as municipal open space and recreation plans, scenic byway corridor management plans, and municipal master plans. Additionally, in June 2013 the *Franklin County Regional Plan for Sustainable Development* was completed. The Plan outlined goals for meeting regional needs and includes as one of the top transportation goals: “increasing bicycle and pedestrian facilities and promoting walking and biking in the region.”

The FRCOG also embraces the principles of complete streets in transportation planning. Complete streets are designed and operated to enable safe access for all users including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete streets are safe for people to walk/bicycle to and from their destinations and also allow buses to run more efficiently. Two regional complete streets planning projects have been completed and are detailed in this chapter.

Guiding Policies and Programs

There are a number of national and state policies and programs that emphasize bicycling and walking to create livable places. These policies encourage (and in some cases mandate)

considerations of bicycle and pedestrian transportation in design. The FRCOG has incorporated the intent of these initiatives into regional transportation planning. The following summaries of policies is intended to provide background and context for bicycle and pedestrian planning for the region.

National Livability Initiative and Partnership for Sustainable Communities

As part of the federal Department of Transportation's Livability Initiative, the Federal Highway Administration (FHWA) has worked with the [Partnership for Sustainable Communities](#), an interagency collaboration of HUD, DOT and EPA, to support livable communities. According to the FHWA, "livability is about tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safe streets. This includes addressing safety and capacity issues on all roads through better planning and design, maximizing and expanding new technologies such as ITS and the use of quiet pavements, using Travel Demand Management approaches to system planning and operations, etc."¹

Healthy Transportation Compact

As part of the 2009 Transportation Reform Legislation, Massachusetts also launched the Healthy Transportation Compact. It is an inter-agency initiative designed to facilitate transportation decisions that balance the needs of all transportation users, expand mobility, improve public health, support a cleaner environment, and create stronger communities. MassDOT views the Compact as an opportunity to strengthen its commitment to public health and increased access for bicyclists and pedestrians.

Statewide Mode Shift Goal

In October 2012, MassDOT announced a statewide mode shift goal of tripling the share of travel in Massachusetts by bicycling, transit and walking by 2030. Through this goal MassDOT aimed to foster improved quality of life by improving the environment and preserving capacity on our highway network. In addition, the goal was intended to achieve positive public health outcomes by providing more healthy transportation options.

Healthy Transportation Policy Directive

The Healthy Transportation Policy Directive was signed in 2013, in order to further the Commonwealth's Healthy Transportation Compact and Mode Shift Goal by ensuring that all

¹ Federal Highway Administration (FHWA). Livability Initiative. www.fhwa.dot.gov/livability. Last updated 6/10/10.

MassDOT projects are designed and implemented in a way that allows access to safe and comfortable healthy transportation options. The directive defines Healthy Transportation modes as walking, bicycling and taking transit, and lays out specific transportation project planning and design requirements to ensure that healthy transportation modes are considered equally as potential solutions.

Massachusetts Complete Streets Certification Program

The 2014 Transportation Bond Bill establishes a complete streets certification program to encourage municipalities to regularly and routinely include complete streets design elements and infrastructure on locally-funded roads. The bill authorizes \$50 million in funding and specifies the creation of a “Complete Streets Certification Program”.

Bicycle Facilities Planning

Statewide Planning Efforts

The state is currently working to update the state bicycle plan. The previous update of the *Massachusetts Bicycle Transportation Plan* was completed in 2008. It provided a complete inventory of existing on-road and off-road facilities, planned projects, and long-term facility proposals. The 2008 Plan also recommends the establishment of a 740-mile, seven corridor Bay State Greenway (BSG) network consisting of on-road and off-road statewide facilities. As a result of that plan, the section of the BSG’s Connecticut River Valley Corridor (East) that travels through Franklin County, primarily on Route 63, was used as a pilot sign project for the installation of Bay State Greenway signs.



Baystate Greenway signs on Rt. 63 in Northfield

Franklin Regional Bicycle Planning

There are challenges associated with the use of bicycles for transportation in Franklin County. The varied geography and topography can be an obstacle. The rural development patterns in some parts of the region mean that individuals may have to travel longer distances to work and to run routine daily errands. These challenges are taken into account when developing bicycle routes and facilities for the region. However, the region’s geographic conditions and topographic features also contribute to the appeal of bicycling in Franklin County. There are many rural roads with low traffic volumes and picturesque rural landscapes that provide for un-paralleled riding conditions elsewhere in the state.

In 2009, the FRCOG completed an update of the 1993 *Franklin County Bikeway Plan*. The 1993 Plan identified the route of the original Franklin County Bikeway network which travels through the central section of the county along the Connecticut River Valley. As of 2010, this approximately 44-mile network had been completed. The *2009 Bikeway Plan Update* expanded the original bicycle network to cover the entire county and to link to neighboring regions. The Update identified bicycling links to Hampshire County, Berkshire County, Worcester County, Vermont, and New Hampshire. It also expanded and diversified the regional objectives to include recreation, tourism, and quality of life related bicycling issues. Additionally, the Update considered the needs of those who are bicycling for different purposes including commuters, students, store patrons, outdoor enthusiasts, and visitors to the region. A map of the Franklin County Bikeway can be found at the end of this chapter.

Existing Bicycle Facilities

Franklin County Bikeway

The initiative to design and construct the Franklin County Bikeway, a regional bicycle network, began thirty years ago. It was focused on the original 44-mile section of the Franklin County Bikeway that consists of both on and off-road bicycle routes centered along the Connecticut River. At this time, the original sections of the Franklin County Bikeway are constructed. The following are descriptions of the constructed off-road and shared roadway facilities:



**The Franklin County
Bikeway Logo**

The Riverside Greenway (Greenfield)

The Riverside Greenway is a one-mile off-road bikepath located in the Town of Greenfield. This path connects a densely populated residential area with a heavily used public recreation facility. The path is owned and maintained by the Town of Greenfield and includes a bicycle and pedestrian bridge over the Green River.

East Mineral Road Bridge (Montague and Erving)

The East Mineral Road Bridge was reconstructed for use as a bicycle and pedestrian bridge. The former vehicle bridge crosses the Millers River from East Mineral Road in Montague to River Road in Erving, and provides an important link in the Franklin County Bikeway network. It provides bicyclists and pedestrians access north and south without having to cross Route 2 at grade. Route 2 is not recommended for bicycle travel because of the high vehicle volumes and speeds.

Canalside Trail (Deerfield and Montague)

The Canalside Trail is located in the Towns of Montague and Deerfield. It links the Connecticut River Great Falls Discovery Center and Unity Park in the Village of Turners Falls

in Montague to McClelland Farm Road, located off of River Road, in northeast Deerfield. It is a 3.27-mile off-road paved multi-use path which travels next to the Connecticut River Canal in Turners Falls and along an abandoned rail corridor including a railroad bridge over the confluence of the Deerfield and Connecticut Rivers in Montague City and Deerfield. There is parking at each end of the Canalside Trail (in Turners Falls and in East Deerfield).

Signed Shared Roadway Sections of the Franklin County Bikeway

The following Franklin County Bikeway shared roadway routes are marked with Franklin County Bikeway trailblazing signs:

- The Northfield Connector is an 11-mile route that links Montague and the East Mineral Road Bridge to the Northfield Mountain Recreation and Environmental Center, downtown Northfield, and inter-regional routes in New Hampshire.
- The Greenfield-Montague Loop Route connect the Canalside Trail, the Northfield Connector, and the Riverside Greenway.
- The Connecticut River Route travels along the Connecticut River from Montague to Sunderland on Greenfield Road and Meadow Road in Montague, and Falls Road and Route 47 in Sunderland.
- The Leverett-Amherst Route travels along Montague Road through Leverett Center to North Amherst.

Existing Bicycle Promotional and Advocacy Programs

In addition, the FRCOG continues to develop promotional materials and programs to educate the public about the existing facilities and encourage bicycling instead of driving. A number of map and informational resources have been developed.

Franklin County Bikeway Maps

There are three Franklin County Bikeway route maps: the Western Franklin County Bikeway Routes map, the Central Franklin County Bikeway Routes map, and the Eastern Franklin County Bikeway Routes map. The maps were most recently updated in 2013. The maps classify each route as novice, intermediate, or advanced in order to help bicyclists to determine the most suitable route to ride given their ability and physical fitness level. The maps also include information on the services available and elevation changes. In addition to the paper maps, digital maps are available on the FRCOG's website (www.frcog.org). These maps are intended for viewing on-line, and are not of a high enough resolution for large scale printing. Additionally, the bikeway route information can be viewed through Google Earth maps (the routes can be downloaded from the FRCOG website to be added to Google Earth).

Tri-State Connecticut River Scenic Byway Bike Route Map

A bicycle route map for the tri-state (Massachusetts, New Hampshire and Vermont) area of the Connecticut River Scenic Byway was completed in 2014. The FRCOG worked jointly with the Pioneer Valley Planning Commission, the Southwest Region Planning Commission (in New Hampshire) and the Windham Regional Commission (in Vermont) to develop a print map, as well as on-line versions of the map that can be viewed in Google Earth (downloadable from www.frcog.org). The project to develop this map also involved the installation of wayfinding signs along this route.

Promotional Campaign to Encourage Healthy Transportation Forms of Travel

In 2015, the FRCOG developed promotional materials to encourage Franklin County residents to shift their transportation mode from a single occupant vehicle to an alternative such as walking, bicycling or riding the bus. The promotional materials are intended to benefit all residents of Franklin County and provide a foundation for future work. An Alternative Transportation Map was created for Greenfield and Montague. This map can be easily re-created for other communities and is designed to contain all the information needed to plan for using healthy transportation options, including information about how to ride the bus and safety tips for pedestrians and cyclists.



Bicyclists in Franklin County

Proposed Future Bikeway Projects

Shared Roadway – Franklin County Bikeway Route Signs

The 2009 *Franklin County Bikeway Plan Update* identified additional shared roadway routes and potential off-road facilities throughout Franklin County. Planning work is underway to identify locations for the installation of Franklin County Bikeway logo signs on these routes. This planning work has already been completed for the routes in western and central Franklin County and work on the eastern Franklin County routes will be completed in the next year.

Bicycle/Pedestrian Bridge on Greenfield Road

The shared roadway Connecticut River Route is part of the Franklin County Bikeway network that is already marked with wayfinding signs. It travels along the Connecticut River from

Montague to Sunderland. This route uses Greenfield Road in Montague, but currently detours onto Hatchery Road, because a bridge that was over the railroad tracks was removed. A shared-use pedestrian-cyclist bridge has been designed to replace the bridge. Work on the construction of the bridge is scheduled to begin in the spring of 2015.

Canalside Trail Bike Path and Pedestrian Crossing Improvements on Montague City Road in Montague

This project will improve the crossing of the Canalside Trail on Montague City Road at Solar Avenue and Depot Street. The work will include the construction and repair of sidewalks and wheelchair ramps, improved bus stops, pavement markings, signage, pavement narrowing for traffic calming and a flashing beacon. This project is scheduled for construction in 2015.

Schell Bridge Replacement

This project will include the demolition of the existing deteriorated bridge structure, which is currently closed, and replace it with a new multi-span pedestrian bridge over the Connecticut River. The bridge design is in the preliminary stages and construction is estimated for 2020-2021. The bridge will provide a bicycle and pedestrian crossing of the Connecticut River in Northfield. It is a link in the Franklin County Bikeway, Connecticut River Scenic Byway and Bay State Greenway route networks.

Millers River Greenway (Orange and Athol)

The Towns of Orange and Athol identified the development of a bikeway/greenway along the Millers River as a priority and took initial steps towards completing a conceptual design in 2000. Since that time, other assessments and conceptual plans were completed that identified both off-road and on-road route options. Most recently, \$2 million was included in the 2014 Massachusetts Transportation Bond Bill for “the purchase, planning, design and construction of a scenic pedestrian river walk and bicycle pathway from South Main Street in the town of Athol to West River Street in the town of Orange”. A series of meetings were held during 2013 and 2014 to discuss and identify a viable bike path route between the Orange Riverfront Park and Athol. The bikeway route planning at this time has focused on an off-road route. The proposed route is approximately 6 miles long and would link the Orange Riverfront Park to the Millers River Environmental Park in Athol. A Project Need Form has been submitted to MassDOT, which is scheduled for review during the summer of 2015.

Erving – Wendell Path

During the development of the Erving Master Plan (2002) and the public participation process for the Route 2 Safety Improvement Project, the lack of alternatives to bicycling on Route 2 in Erving was noted as a community concern. It was recognized that Route 2 is not

recommended for bicyclists and pedestrians because it has a narrow and winding layout, lacks sidewalks and roadway shoulders in many locations, and has high traffic volumes and speeds. On two occasions (2002 and 2011), the FRCOG reviewed potential bicycle and pedestrian links in Erving. Possible bicycle and/or pedestrian connections, other than the use of Route 2, to link the areas of Erving known as Farley and Erving side to Erving Center were explored. Routes in Erving Center including potential connections from Mountain Road to the east and a route through the town-owned cemetery on Cemetery Road to Flagg Hill Road were assessed.

Old Farley Road in Wendell was identified as another potential off-road walking/bicycling route option. It is an existing dirt road that is located to the south of the Millers River in Wendell. The route is accessible from Arch Street off of Route 2 in Erving Center. Old Farley Road travels west along a dirt road for approximately 2 miles and connects to Posk Place in Wendell. Much of this route travels on land within the Wendell State Forest, which is owned by the Massachusetts Department of Conservation and Recreation (DCR). The trail terminates at Posk Place in Wendell near the Metacomet-Monadnock-Mattabesett (M-M-M) Trail hiking trail and is also a popular fishing location.

It is also possible that the route could continue west to Farley Road and Mormon Hollow Road and link to Wendell Road in Montague and connect to the Village of Millers Falls. Another possibility is that this route could link to the east (Sears Road) to Wendell Depot Road. An exploration of this Wendell bikeway option was reviewed in 2011. The possible routes on Old Farley Road and Sears Road were reviewed and potential issues such as environmental, historical resources and right of way were analyzed. A number of issues related to environmental permitting and right of way were outlined and recommended for further research.

Deerfield Route (Route 5/10 Bypass)

The Deerfield Master Plan (April 2000) identified a route that would provide an alternative to bicycling on Route 5/10 in Deerfield. The plan recommended the construction of an off-road bike path to the south of the Cheapside Bridge and to the west of Route 5/10. The proposed route travels near the Deerfield River to Pine Hill Road (or Old Ferry Road which is an old 1732 county road), and would provide a connection for bicyclists into Historic Deerfield. There is currently a dirt road along a portion of this route that could potentially serve as the bike trail. However, some further analysis of the feasibility of this route is needed to determine if an off-road bicycle path could be developed.

South Deerfield and Whately Improvements on Route 5/10

A section of Routes 5/10/116 in Whately and South Deerfield was examined as part of the 2012 Complete Street Plan. The area reviewed was from the intersection near the Park & Ride lot at Sunderland Road to the traffic light at the intersection of Conway Road. It is a major regional collector road. There are a number of automobile oriented businesses, large regional employers, and a Park & Ride lot that is serviced by FRTA and PVTA. There are bicyclists already using this corridor. Improved shoulders or the development of a separate bike path within the wide right-of-way were recommended to make this corridor a better place for bicyclists.

Analysis of Rail with Trails

As part of the 2013-2014 Unified Planning Work Program, the feasibility of constructing a bike path along the active Connecticut River Main Line railway right of way was completed. This route runs parallel to and provides an alternative to bicycling on Route 5/10 in Whately, Deerfield, and Greenfield. An analysis of the right-of-way and potential issues was completed. The analysis concluded that sections of the route have ample right of way and minimal design constraints, while other sections of the route would pose design challenges because of constrained right-of-way and steep slopes. Further analysis of these options and costs are needed.

Bikes on Buses and Rail

All Franklin Regional Transit Authority (FRTA) and Pioneer Valley Transit Authority (PVTA) buses that operate in Franklin County are equipped to carry bicycles. This allows the opportunity for a commuter to travel a portion of their trip by bus and a



Bicycle parking at the John W. Olver Transit Center.

portion by bicycle. Future public transportation system expansions, as well as the future development of regional rail services through the region, should consider the feasibility of allowing bicycles in order to encourage the use of bicycles as a viable form of transportation.

The newly operating Amtrak Vermonter service does not currently accommodate bikes on the train.

Bicycle Parking

The FRCOG has continued to promote and encourage the installation of additional bike parking. During the fall of 2014, the City of Greenfield and FRCOG completed a survey in downtown Greenfield to identify additional locations for parking. The FRTA has also identified a need for additional parking at its bus shelters and the John W. Olver Transit Center due to an increase in bus passengers using bicycles for portions of their trips. There is a clear continued need for bicycle parking across the region.

Pedestrian Facilities Planning Efforts

Statewide Pedestrian Plan

MassDOT is committed to promoting walking as an important mode of transportation that will help to reduce emissions and support healthy lifestyles. The 1998 *Massachusetts Pedestrian Transportation Plan* serves as a guide to state, regional, and local transportation planners to better serve walkers. MassDOT is currently working to update the Massachusetts Pedestrian Plan.

Franklin Regional Pedestrian Plan

The FRCOG completed a *Franklin Regional Pedestrian Plan* in 2010. The Plan focused on pedestrian connections within towns and the region. Town officials were surveyed about the general walking conditions and specific areas of concern or interest within the town. Additionally, pedestrian related issues at schools and senior centers were reviewed. Based on the results of the surveys and the assessment of school and senior center pedestrian access information, in depth walkability assessments were conducted at nine focus areas. The focus areas were: Bernardston Village Center, Bernardston School Road, Buckland North Street and Route 112 (Ashfield Road), Colrain Village Center (Route 112), Leverett Elementary School/Library, Orange East River Street, Orange Butterfield Elementary School, Shelburne Falls (Bridge Street/Elementary School), and Turners Falls/Sheffield Elementary School. In conclusion to the walkability assessments, specific pedestrian facility related recommendations were formulated and some of these were turned into design projects.

Existing Pedestrian Facilities

The FRCOG recognizes that there are challenges to walking and planning for walkable communities within a rural region. The distance that individuals who live in Franklin County must travel to work and/or to run errands can make walking an impractical and inefficient transportation option under some circumstances. In some areas, walking can be physically

challenging because of steep terrain and pedestrian facilities vary widely throughout the county. The more densely developed communities in Franklin County have a larger amount of pedestrian facilities on their streets than the smaller communities, but in some cases the sidewalks, curb-cuts and/or crosswalks are in need of upkeep and repair. There are also many roads in rural areas that have no sidewalks or shoulders.

Consequently, the focus of pedestrian planning in the region has been on identifying walking connections and planning for infrastructure improvements such as sidewalks, safe crosswalks, and connections to shops, services, and residences whenever possible. Additionally, as other roadway improvement projects are designed, pedestrian related issues are identified in order to include solutions in the construction.

Further, the FRCOG has focused on planning for Complete Streets as a way to identify pedestrian and bicycle infrastructure improvements that can be added to other constructions projects. As noted, two regional Complete Streets Projects were completed (2012 and 2014) that identified many pedestrian focused improvements. The details of the Complete Streets Projects and recommended improvements are discussed in the section below which details future pedestrian infrastructure improvements.

Recently Completed Pedestrian Improvements

Buckland State Street Reconstruction Project

State Street in Buckland was reconstructed during 2010-2012. The project area extended 4,000 feet from Clement Street to Route 2, and included pedestrian oriented improvements at the intersections of State Street and North Street, and State Street and Old State Street. The project also included the reconstruction of sidewalks to Americans with Disabilities Act (ADA) compliance and the improvement of crosswalks and curb-cuts throughout the project area.

Greenfield Olive Street Sidewalk and Low Impact Development Measures

Sidewalk and streetscape improvements were completed on Olive Street in Greenfield near the John W. Olver Transit Center. The sidewalk on the south side of the road was reconstructed and the curb was extended to incorporate a planting area. This area was reviewed as part of the 2012 Complete Streets Project and it was recommended that the sidewalks be widened because the roadway area was excessively wide and promoted vehicle speeding.

Future Pedestrian Infrastructure Improvements

There are several pedestrian infrastructure projects in the region that are currently being designed. The following are brief descriptions of these projects.

Buckland North Street and Route 112 Connection to Mohawk Regional School

The town of Buckland has requested improvements on Route 112 from North Street to Mohawk Trail Regional High School, a distance of 0.5 mile, to better accommodate pedestrians. A sidewalk is desired, but because of issues related to winter maintenance, MassDOT is designing a shoulder widening project to accommodate both pedestrians and bicycles. There are continued concerns that a wide shoulder is not the best option for providing for pedestrian accommodation, and the FRCOG will continue discussions throughout project development to design a project that all support.

Charlemont Roadway Reconstruction and Village Traffic Calming Project

Pedestrian infrastructure improvements on Route 2 in Charlemont center are included as part of a 0.9 mile roadway reconstruction project that begins approximately 600 feet west of where Route 8A crosses the Deerfield River and ends just east of South Street. The project is currently being designed and scheduled to be constructed beginning in 2017. It includes roadway and sidewalk reconstruction work, and the construction of various traffic calming measures in the Charlemont village center. All existing sidewalks and curb-cut ramps will be reconstructed to achieve accessibility compliance.

Colrain Center Intersection Improvements

This project is to reconstruct the three-legged intersection of Main Road, Jacksonville Road and Greenfield Road in Colrain village center. The project is intended to improve sight distance and pedestrian accommodation. The project includes reconstructing the intersection and its approaches from 0.1 mile north and south, and 0.5 mile west to the town offices. It also includes creating an accessible network of sidewalks, ramps, and crosswalks to link popular village center locations. The project will include approx. 0.5 mile of new sidewalk, with landscaping and streetscape elements to promote pedestrian mobility in the village. Colrain Center was assessed as part of the 2012 Complete Streets Project.

Ervingside Streetscape Improvements

The Ervingside Streetscape Improvement Project was awarded funding from the National Scenic Byway Program to complete the design and construction of sidewalk and streetscape improvements along the Connecticut River Scenic Byway (Route 63) in Erving. The project is intended to improve pedestrian access and safety on a one mile section of Route 63 in Erving. The project area spans from the north side of the bridge over the Millers River on Bridge Street (at the Erving/Montague town border) to the Erving Senior center. The project area is just over one mile long, and includes the Erving section of Millers Falls and the

adjacent residential neighborhood known as Ervingside. The design is scheduled to start during 2015 and construction is scheduled for 2016.

Greenfield Cheapside Intersection Improvements

This intersection is poorly aligned, confusing to motorists, and has several safety issues. This project will realign the intersection and add needed turn lanes to improve traffic flow and safety. The project includes measures to improve pedestrian access. This intersection was evaluated as part of the 2012 Complete Streets Project. It is scheduled for construction during 2015.

Greenfield Route 2A, River Street and Shelburne Road Intersection Improvements

This intersection project incorporates components to create better pedestrian access. This intersection was examined as part of the 2012 Completed Streets Plan and pedestrian improvements were suggested. Many of the pedestrian improvements were incorporated into this project. It is scheduled for construction during 2015.

Greenfield Turners Falls Road

Turners Falls Road in Greenfield is a steep winding hill that leads from east Greenfield into the village of Turners Falls in Montague via the White Bridge. The route is frequently traveled by pedestrians and bicyclists, but it does not have a sidewalk or a lane/shoulder to accommodate bicycles. On the west side of Turners Falls Road, there is a steep incline with rock outcroppings. On the east side of the road, there is a steep drop down a large hill to the Connecticut River. On numerous occasions concerns over the frequent and regular use of this route (Turners Falls Road and Loomis Road) by pedestrians and the lack of infrastructure was expressed to the FRCOG.



Bicyclist on Turners Falls Road

Turners Falls Road links to 5th Street and Canal Street in Turners Falls. It is also a link to the Canalside Trail Bikepath. This route is an important gateway to Turners Falls and connects two large regional environmental justice areas. The route has a high volume of vehicular, pedestrian and bicycle traffic. The FRCOG examined this route as part of the 2014 Complete Streets Project and provided recommendations for better pedestrian and bicycle accessibility. Further study is planned for next year and the design and implementation of

safety improvements for bicyclists and pedestrians on Turners Falls Road is one of the Top 25 Transportation Recommendations for Franklin County included in this 2016 Regional Transportation Plan.

Greenfield Leyden Road

Leyden Road is a frequently used walking route that does not have sidewalks on the 1 mile section from Nash's Mill Road to Leyden Woods Road. Leyden Road is a main route from this densely populated housing complex into downtown Greenfield, and it intersects with Nash's Mill Road within a ½ mile of the Greenfield Swimming and Recreation Area and the terminus of the Riverside Greenway Bike Path. Additionally, there are densely developed residential neighborhoods, including an affordable housing development on Leyden Road and the surrounding area. This area is also an identified environmental justice area in Franklin County. Leyden Road is served by the Franklin Regional Transit Authority's (FRTA) Route 21 Greenfield Community Route bus. The lack of a sidewalk on this route has been the focus many comments received during public outreach. The City of Greenfield is exploring installing a sidewalk on Leyden Road because pedestrians are often walking along the section of Leyden Road between Leyden Woods (residential development) and Nash's Mill Road/Conway Street. The FRCOG assessed this route as part of the 2014 Complete Streets Project and design and implementation of safety improvements for bicyclists and pedestrians on Leyden Road is one of the Top 25 Transportation Recommendations for Franklin County included in this 2016 Regional Transportation Plan.

Northfield Streetscape and Safety Improvements Phase II

Phase II of the Northfield Main Street Improvement Project involves intersection and pedestrian safety improvements on Main Street (Routes 10/63) in the Town of Northfield. The work will include replacement of raised medians and relocation of flashing traffic signals; various crosswalk upgrades; new sidewalk construction; and other incidental work. The length of the project is approximately 2.65 miles, beginning at the intersection of Route 10 and 63 and extending to Moody Street. The project was approved by the MassDOT Project Review Committee, but the project has not yet been designed.

Orange North Main Street

This project will reconstruct the road and repair drainage and retaining walls along a ½ mile section of North Main Street in downtown Orange. As part of this project, ADA accessible sidewalks will be constructed along with traffic signing, landscaping, and streetscape improvements. The project begins on North Main Street at the School Street intersection and ends at the intersection of Lincoln Avenue, a distance of approximately 0.4 miles. Construction is scheduled for 2018. North Main Street from the intersection of North Main,

South Main, West Main and East Main Streets (Route 2A) to the Fisher Hill and Dexter Park Schools was assessed as part of the 2014 Complete Streets Project. The area assessed was approximately 1 mile long. The roadway and sidewalk are in poor condition. North Main Street area connects the commercial downtown area in Orange to the residential neighborhoods, and is generally walkable if the infrastructure is improved. Pedestrian improvements are important to this area.

Orange East Main Street

East Main Street (Route 2A) is a main travel route from downtown Orange to Athol. It is a commercially oriented business area with many of the businesses being automobile oriented in their design and access layout. However, East Main Street is also an important route for pedestrians and bicyclists. It is a key connection to essential services for the population of this area. It is within walking distance of many residential areas and is also part of the FRTA Greenfield/Orange bus route (Route 32). This area was examined as part of the 2014 Complete Streets Project, and the construction of sidewalks, highly visible crosswalks and Americans with Disabilities Act (ADA) compliant curb-ramps were recommended.

Orange East Water Street

Water Street in downtown Orange links South Main Street to East Main Street. This route travels near Memorial Park, Rodney Hunt Manufacturing, the Orange District Court and an FRTA transit stop. This route is an important walking link within the downtown area of Orange. This area was examined as part of the 2014 Complete Streets Project, and recommendations to better accommodate pedestrians and bicycles were outlined, such as constructing sidewalks, relocating obstructions in the sidewalks, and painting all crosswalks to be more visible.

Orange West River Street

West River Street in Orange is located south of the intersection of North, South, East and West Main Streets (Route 2A and Route 122) in downtown Orange. West River Street is on the south side of the Millers River. The post office is at the corner of South Main Street and West River Street. This area was examined as part of the 2014 Complete Streets Project and is an identified environmental justice area. It was recommended that the road be realigned and the travel lanes narrowed to allow room for bike lanes and wide sidewalks. Improvements at the intersection of West River and South Main Street were recommended to improve the crosswalk and install a curb extension to shorten the crossing distance for pedestrians.

South Deerfield Streetscape Improvements

South Deerfield village center is a pedestrian friendly area. A number of streetscape design elements have been considered conceptually. Most recently the 2013 Downtown Deerfield Complete Streets and Livability Plan outlined some potential improvements to make the area more pedestrian and bicycle friendly, such as completing the new pavement marking plan that better accommodates bikes and pedestrian (developed as part of the Livability Plan), designating Sugarloaf and Elm Streets as part of the Franklin County Bikeway, and installing landscaping barrels (designed as part of the Livability Plan).

Sunderland North Main Street

This project will consist of box-widening and resurfacing North Main Street from the Route 116 intersection to Claybrook Drive. The project will also include sidewalk reconstruction, new wheelchair ramps, drainage system replacement and new pavement markings and signage. This area was examined as part of the 2014 Complete Streets Project, and crosswalk and curb-cut improvements, improved pedestrian crossing signals, and bicycle lane and/or Sharrows were recommended.

Ongoing Activities with Both Bicycle and Pedestrian Components

Safe Routes to School Program

The Massachusetts Safe Routes to School (SRTS) Program is intended to encourage walking and bicycling to school by providing technical assistance and support to schools. It also provides an opportunity for schools that are enrolled in the program to receive assistance in assessing and improving infrastructure within one mile of their school. The program is a grassroots initiative where individual schools design their own activities. In 2011, the FRCOG reached out to schools and encouraged enrollment in the SRTS program. At the time that the project was undertaken, there was one Franklin County school enrolled in the program. There are now currently eight schools in the region that are now enrolled in the program including:

- Bernardston Elementary School, Bernardston
- Colrain Central School, Colrain
- Erving Elementary School, Erving
- Discover School at Four Corners, Greenfield
- Federal Street School, Greenfield
- Newton Street School, Greenfield
- Greenfield Middle School, Greenfield
- Sunderland Elementary School, Sunderland

The FRCOG continues to encourage schools to enroll in the program and has also provided support to schools that have enrolled by assisting with walking assessments.

Complete Streets

In 2012 and 2014, Regional Complete Streets Projects were completed. These projects selected locations in Franklin County and conducted comprehensive assessments and design recommendations for these sites. In the *Franklin County Complete Streets Project* (September 2012) five locations were analyzed and specific recommendations were made. The locations assessed were:

- Colrain Center: Main Road, Jacksonville Road and Greenfield Road
- Greenfield: Deerfield Street (Route 5/10) and Cheapside Street
- Greenfield: Main Street (Route 2A), River Street and Shelburne Road
- Greenfield: Bank Row, Olive Street and Hope Street near the John W. Olver Transit Center
- Whately and South Deerfield: Routes 5/10/116 (Greenfield Road) from Sunderland Road to Conway Road

In the *Franklin County Complete Streets Project Part 2* (September 2014), an additional ten locations were assessed. The locations were:

- Conway: Deerfield Street, Whately Road and Main Street
- Erving: Route 63 in Ervingside
- Greenfield: Nash's Mill Road and Leyden Road
- Greenfield: Cherry Rum Plaza
- Greenfield: Turners Falls Road
- Orange: West River Street
- Orange: East Main Street (Route 2A)
- Orange: North Main Street
- Orange: East Water Street
- Sunderland Center: Intersection of Route 47 and 116.



Crosswalk in Sunderland Center.

Mass in Motion

Mass in Motion (MiM) is a statewide program that promotes opportunities for healthy eating and active living in the places people live, learn, work and play. MiM works with

communities, schools, childcare centers, and businesses to create changes that make it easy for people to eat better, move more, make better choices to feel healthy and live well. Since 2012, the FRCOG has coordinated the MiM initiative for Franklin County. In Franklin County, the program is focused on promoting Complete Streets policies, encouraging joint use agreements for locations that can serve multiple functions and increase opportunities for healthy activities, and supporting efforts to increase the use of local foods in institutional food services.

Bike Week Event and Park(ING) Day

The FRCOG has worked to encourage and promote the use of bikes for transportation by hosting events during Baystate Bike Week and on Park(ING) Day. In 2013 and 2014, the FRCOG hosted a breakfast at the John W. Olver Transit Center in Greenfield for bike commuters during Baystate Bike Week. The FRCOG has also collaborated with the City of Greenfield and the Greenfield Business Association to participate in Park(ING) Day, an annual worldwide event where a metered parking space is transformed into a temporary public park, in downtown Greenfield. The FRCOG has used both of those events to provide information and complete outreach about healthy transportation options and current transportation planning projects.

Public Input Received During the Regional Transportation Planning Process

Public Outreach Meetings

During the Regional Transportation Plan public outreach meetings the following bicycle and pedestrian related comments and recommendations were received:

- Create vegetation management plans to address the growth of invasive plants such as Poison Ivy and Knotweed that encroach into sidewalks and areas to walk along roadways. This was noted as an issue on North Leverett Road in Wendell and Leverett.
- Install shared roadway bike lanes in Sunderland to connect communities and cross county lines.
- Reconfigure the parking on Main Street in Greenfield to be more bicycle-friendly.
- Improve the bicycle and pedestrian connections between Turners Falls and Greenfield.
- Create a bike path connection between Unity Park in Turners Falls and downtown Greenfield.
- Create more bicycle-friendly roadways.
- Clear snow on sidewalks and curb cuts in the winter. This is an ADA accessibility issue.

Regional Transportation Survey

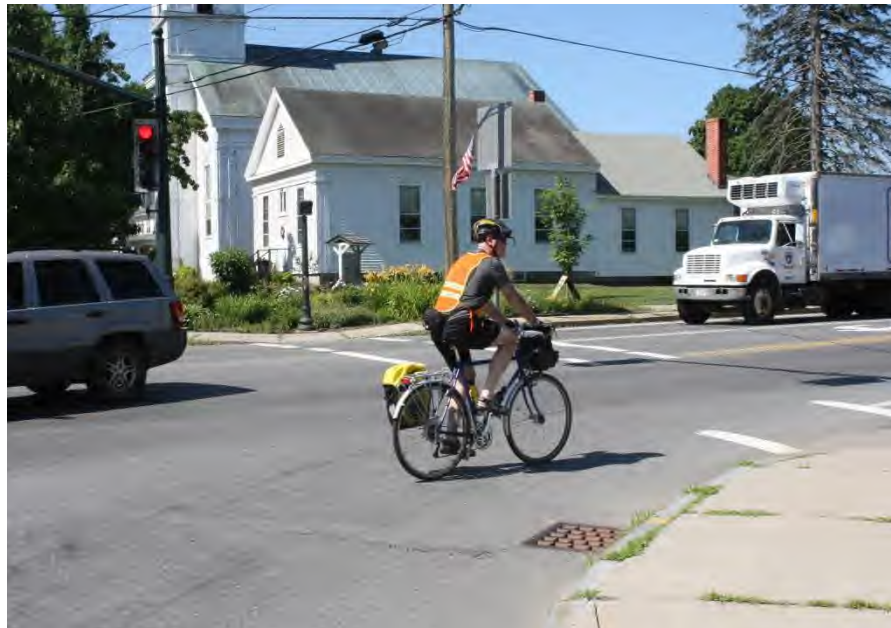
A survey was conducted as part of the development of this Regional Transportation Plan. The following are general bicycle and pedestrians related comments that were gathered from the survey responses:

- A majority of the participants expressed that improving existing sidewalks and adding new sidewalks were “medium level priorities”.
- An equal number of participants felt that adding more bikepaths was a “high level priority” as the number who expressed that it was a “medium priority”.
- For 4% of the survey respondents, walking is their primary mode of transportation.
- The lack of sidewalks on Leyden Road was specifically noted.
- Difficulty biking and walking between Greenfield and Turners Falls is a problem.
- Franklin County is a great place to bike and more resources should be devoted to this mode of transportation.

Recommendations for Bicycle and Pedestrian Facilities

- Pursue funding to install Franklin County Bikeway Logo signs, on the remaining segments of the Franklin County Bikeway as outlined in the *Franklin County Bikeway Plan Update (2009)*.
- Update and distribute Franklin County Bikeway Maps to help promote bicycling in Franklin County.
- Further identify and evaluate the viability of potential extensions of the Franklin County Bikeway and potential connections to other bicycle trails and paths in the greater regional area.
- Conduct additional Complete Streets assessments for upcoming Transportation Improvement Projects and promote the concept of Complete Streets.
- Support efforts to implement the design work for the Millers River Greenway in Orange and Athol.
- Pursue funding to complete preliminary design for the Erving-Wendell Bike Path.
- Improve roads for bicycle and pedestrian accommodation.
- Consider the issue of snow removal from sidewalks and ramps.
- Include pedestrian and bicycle infrastructure improvements when appropriate into the scope of road construction projects.
- Implement specific improvements identified in the *Franklin Regional Pedestrian Plan (2010)*, *Franklin County Complete Streets Project (2012)* and *Franklin County Completes Streets Project Part 2 (2014)*.
- Continue to support and assist Franklin County schools in the Massachusetts Safe Routes to School Program.

- Work to improve the pedestrian network by filling in the gaps where sidewalks and crosswalks are needed and prioritize ADA compliance projects.
- Develop and implement a campaign to educate the public about safe pedestrian practices and promote walking as a transportation option.
- Improve the 5th Street gateway entrance to Turners Falls from Greenfield to better accommodate pedestrian flow and vehicle safety.
- Rehabilitate Avenue A in Turners Falls with pedestrian-focused streetscaping that is ADA accessible and to accommodate additional bicycle parking.



Bicyclist riding on Route 116 in Sunderland Center.

Franklin County Massachusetts

Franklin County Bikeway Network

 Bikeway Route

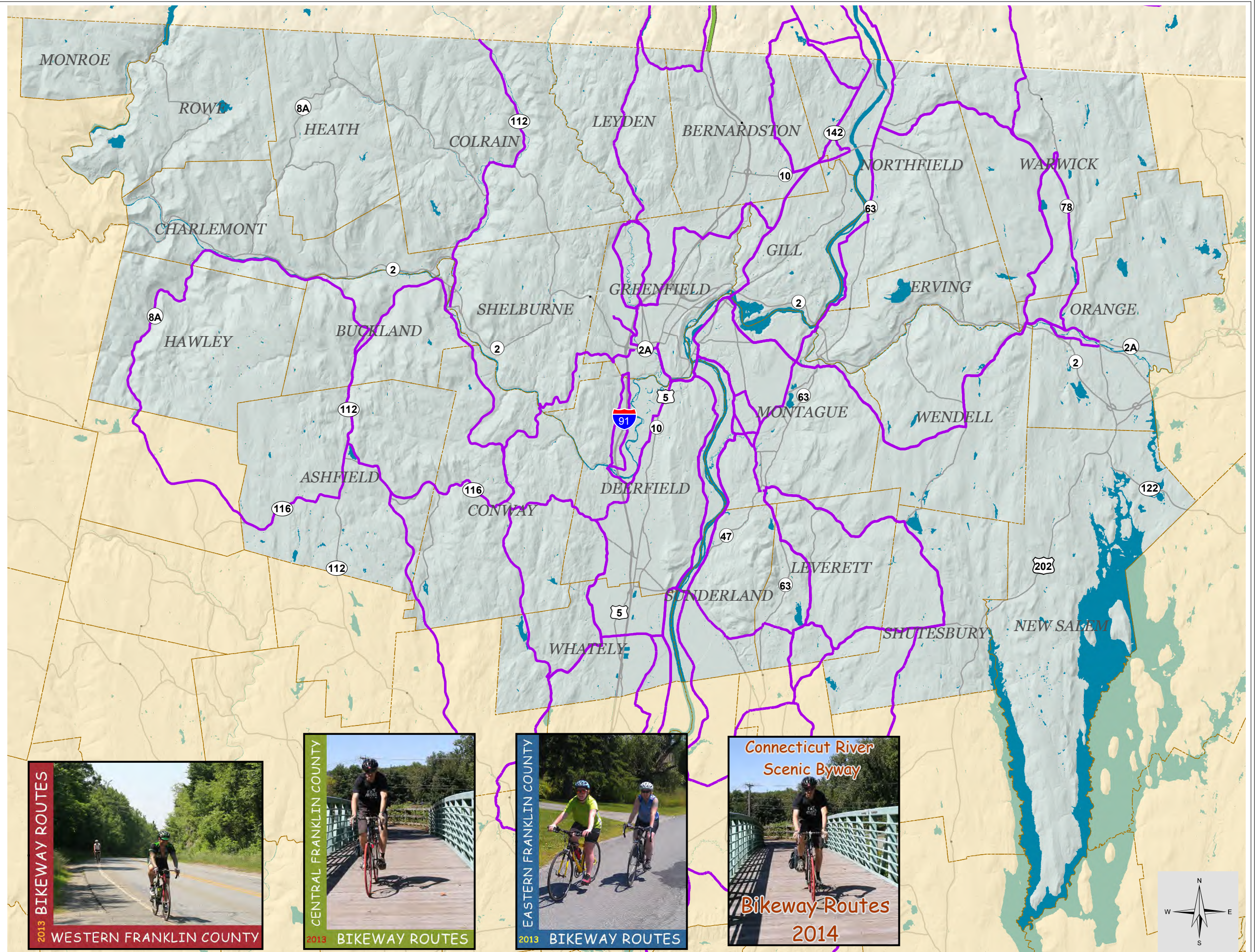
**This map consists of a series of shared roadway routes and off-road routes*



This Franklin County bikeway sign is posted throughout the county along designated bikeway routes for the purpose of wayfinding.



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



11

Scenic Byways & Regional Tourism



2016 Regional Transportation Plan

11 Scenic Byways and Regional Tourism

The five scenic byways in Franklin County play an important role in regional tourism. The five byways are the Connecticut River Scenic Byway, the Route 112 Scenic Byway, the Route 116 Scenic Byway, the Route 122 Scenic Byway and the Mohawk Trail Scenic Byway. Four of the byways are state designated and one of the byways, the Connecticut River Byway (Route 63 and 47), is nationally designated.

Both state and nationally designated scenic byways are part of the National Scenic Byways Program, a grass-roots collaborative effort established to recognize, preserve and enhance selected roads throughout the United States. The program was originally established as part of the Intermodal Surface Transportation Efficiency Act of 1991. It recognizes certain roads as scenic byways based on archeological, cultural, historic, natural, recreational and/or scenic qualities. In Massachusetts, eligible roads are officially designated as scenic byways through an act of the Legislature.

The designation is primarily honorary and intended to recognize the special nature of these roads, using it to promote and protect the area as determined by local interests. Until 2011, funding was available through an annual discretionary grant program for projects that enhanced, protected and promoted the intrinsic qualities of the byway. In Franklin County, many projects have been funded through the scenic byway discretionary program ranging from the creation of corridor management plans, completion of land protection, the development of promotional materials, and the planning and construction of streetscape improvements. These funded projects have enhanced existing tourism activities, and laid the groundwork for continued tourism initiatives along the byways.

Scenic Byways

The following section describes the five scenic byways in Franklin County and describes recently completed or active projects on each byway.

Connecticut River Scenic Byway

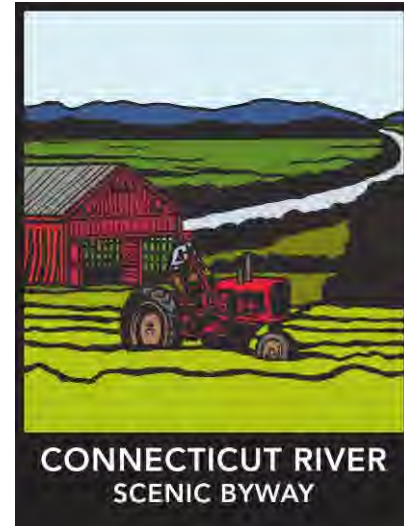
The Connecticut River Scenic Byway travels through the heart of the Connecticut River Valley and neighboring farmland, floodplains, and historic villages from northern New Hampshire and Vermont through Franklin County into Hampshire County in Massachusetts. Along the byway corridor, there are many sites and resources that highlight the rich history of the area dating back to the 1600s and the early inhabitation by Native Americans and Colonial settlers. The Connecticut River Valley's history and farming heritage is still reflected in the

many surviving architectural resources that can be seen along the byway. The Franklin County section of the byway, consisting of Route 63 in the towns of Northfield, Erving, and Montague and Route 47 in Montague and Sunderland, was designated as a state scenic byway by the Massachusetts Legislature in 2000, and the Hampshire County section of the byway (Route 47 in Hadley and South Hadley) was also designated in 2003. In 2009, the Connecticut River Scenic Byway was then designated as a National Scenic Byway. This remains the only nationally designated scenic byway in the Commonwealth.

Recently Completed Projects

Connecticut River Scenic Byway Tri-state Bike Map

In a project that included the Pioneer Valley Planning Commission (PVPC), the Windham Regional Commission (Vermont), and the Southwest Regional Planning Commission (New Hampshire), the FRCOG coordinated the development and printing of an on-line map of the bicycle facilities connecting the three states. There are links on the frcog.org website to the pdf of the print map and to on-line versions of the maps that can be viewed in Google Earth.



The logo and way-finding sign for the Connecticut River Scenic Byway.

The project also included the installation of way-finding signs to aid in navigation along a recommended bicycle route that connects Greenfield, Brattleboro VT, and Keene NH. Additionally, the project included the purchase of bicycle parking racks for installation at key visitor oriented locations in the Hampshire County section of the Byway. The intention of the project was to enhance the bicycling resources in the tri-state area of the Connecticut River Scenic Byway and to build on the growing bicycle touring section of the regional economy.

Projects Underway

Connecticut River Scenic Byway Corridor Management Plan Update

A Corridor Management Plan was originally completed for the Byway in 1998, and provided recommendations for promoting economic opportunities while protecting the natural, cultural, and historic resources of the Byway. With funding through the National Scenic Byway Program, work is currently underway to update the Corridor Management Plan. The updated plan will be completed in March 2016.

*Erving*side Streetscape Improvements

The Connecticut River Scenic Byway passes through the Town of Erving along Route 63. A one-mile section of this route has been awarded funding to complete the design and construction of sidewalk and streetscape improvements. The project is intended to improve pedestrian access and safety. The project area includes the Erving section of Millers Falls and the adjacent residential neighborhood known as Erving

side. Comprehensive plans for sidewalk and streetscape elements will be developed as part of the project. The improvements will link residential neighborhoods, the Erving Library, Veterans Memorial Park, the Erving Elementary School, the Senior Center and the business that are located along Route 63 in Erving.

Mohawk Trail Scenic Byway

The Mohawk Trail Scenic Byway is one of the earliest scenic byways in New England, receiving its designation in 1953. The byway travels on Route 2 and 2A through Berkshire, Franklin and Worcester counties. In Franklin County, the byway travels through the towns of Charlemont, Buckland, Shelburne, Greenfield, Gill, Erving and Orange.

The western section of the byway (Williamstown to Greenfield) follows the east-west route first used by Native Americans between the Hudson River and the Connecticut River Valleys. The route continued to be used for travel by colonists and eventually was upgraded to support subsequent forms of transportation. The western section of the byway was the first state road to be designated and constructed as a scenic tourist route, opening amid much fanfare in 1914.

The eastern section (Greenfield to Athol) also first developed as a foot path of the Native Americans. The Europeans from the Connecticut River Valley later used this trail to settle the northern interior of Massachusetts and for commerce by horse and cart. Later, entrepreneurs from the cities in eastern New England built the Fifth Massachusetts Turnpike along much of the original pathway. During this development, the road was changed and improved to accommodate new modes of transportation and infrastructure.

Recently Completed Projects

Mohawk Trail Historic Preservation Project

The FRCOG is working with the Berkshire Regional Planning Commission (BRPC) to complete the Mohawk Trail Historic Preservation Project. The goal of the project is to preserve historic properties located on the Mohawk Trail Scenic Byway. The project has two components: 1) to prepare Massachusetts Historic Commission Survey Forms and/or National Register of Historic Places nomination forms for several properties along the Mohawk Trail Scenic Byway,

and 2) to conduct a study to determine the feasibility of developing and administering a revolving loan fund to assist landowners in preserving historically significant properties on the Mohawk Trail. The FRCOG worked with the local Historical Commissions to identify properties that are of historic significance along the Mohawk Trail corridor. The national Register of Historic Places nominations have been prepared for the Riverside District in Gill, the Shelburne Free Library and the Little Red Schoolhouse in East Charlemont. The feasibility study is underway.

Route 112 Scenic Byway

The Route 112 Scenic Byway was officially designated as a scenic byway by the Massachusetts Legislature in 2004. The Route 112 Scenic Byway travels through the Towns of Colrain, Buckland, Shelburne, and Ashfield in Franklin County and the Towns of Goshen, Cummington, Worthington, and Huntington in Hampshire County. It travels through historic town centers, working farms, scenic rivers, and majestic forests with beautiful mountains providing a backdrop. The corridor is rich in natural, cultural, and historic resources. In addition, the byway intersects with the Mohawk Trail Scenic Byway to the north and the Jacob's Ladder Trail Scenic Byway to the south. A Corridor Management Plan for the Route 112 Scenic Byway was completed in 2009.



**Route 112 bridge in Colrain Center
over the North River.**

Route 116 Scenic Byway

The Route 116 Scenic Byway is the most recently designated Scenic Byway in Franklin County. In 2008, the Massachusetts Legislature designated Route 116 in the towns of Deerfield, Conway, Ashfield, Plainfield, Savoy, and Adams as a scenic byway. The byway travels 39 miles from the Deerfield/Sunderland town line (at the Connecticut River) to downtown Adams (in Berkshire County) at the intersection of Route 116 and Route 8. In Franklin County, the Byway travels through the towns of Deerfield, Conway, and Ashfield. In Deerfield, the byway route follows the historic route of Route 116 (the current Route 116 bypass was constructed in the 1960s) onto Sugarloaf Street through historic South Deerfield center onto Elm Street and north onto Routes 5/10/116. The byway rejoins Route 116 to the west of South Deerfield center and travels west to historic Conway center, which travels

past the Burkeville Covered Bridge which is on the National Register of Historic Places and has recently been restored. Route 116 continues west through historic Ashfield center, where it intersects with Route 112, which is also a designated scenic byway.

Recently Completed Projects

Corridor Management Plan

A Corridor Management Plan for the Route 116 Scenic Byway was completed in 2013. The plan was developed in coordination with BRPC and PVPC. The plan details the many scenic, cultural, historic, natural, and recreational resources along the byway. It provides recommendations for protecting and enhancing these resources.



Farmland along Route 116 in Franklin County.

Route 122 Scenic Byway

In 2005, the Massachusetts Legislature designated Route 122 in the Towns of Paxton, Rutland, Oakham, Barre, Petersham, Orange, and New Salem as a scenic byway. The Route 122 Scenic Byway travels from the Paxton/Worcester town line to downtown Orange. Paxton, Rutland, Oakham, Barre, and Petersham are in Worcester County, and New Salem and Orange are in Franklin County. The Franklin County section of the byway travels along the northern end of the Quabbin Reservoir. In Orange, the byway terminates at the intersection of Route 122 and Route 2A, part of the Mohawk Trail Scenic Byway.

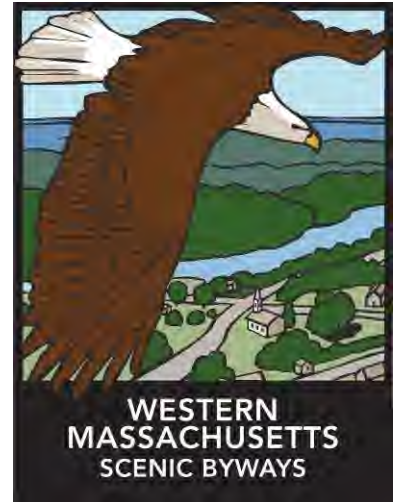
Recently Completed Projects

Corridor Management Plan

The FRCOG completed a corridor management plan for the Franklin County section of the Route 122 Scenic Byway in New Salem and Orange. The eastern end of the project area is at the town border of New Salem and Petersham. The corridor management plan was completed in June 2011. The plan includes: inventories of the historic, cultural, and natural resources; a scenic landscape inventory and assessment; and the identification of heritage and recreational tourism-related attractions and support services. The plan also includes recommendations to help guide future byway-related activities and projects.

Western Massachusetts Byways Promotional Campaign

The Western Massachusetts Scenic Byway Marketing Project is a collaborative effort of the Berkshire Regional Planning Commission (BRPC), the Central Massachusetts Regional Planning Commission (CMRPC), the FRCOG, the Pioneer Valley Planning Commission (PVPC), and the Massachusetts Department of Transportation (MassDOT) to create unified promotional materials for the seven scenic byways in western Massachusetts. The project has included the development of individual byway logos, advertising materials, a website, and way-finding signs. Each of the byways has its own unique character and story, and the project developed materials to highlight these qualities while also presenting the information as part of a network. The byway's website, <http://www.bywayswestmass.com>, was launched in June 2013. The way-finding sign installation will be completed by June 2015.



Western Massachusetts Scenic Byways Logo.

Scenic Byway Land Protection Project

The FRCOG is working cooperatively with the Franklin Land Trust, MassDOT, Massachusetts Department of Conservation and Recreation (DCR), and the Massachusetts Department of Agriculture (DAR) to permanently protect land along the Mohawk Trail, Connecticut River and Route 112 Scenic Byways. To date, approximately 1,000 acres of landscapes critical to the Mohawk Trail, Connecticut River and Route 112 Scenic Byways have been permanently protected.

Transportation Related Regional Tourism

Regional tourism is an important consideration for transportation and travel in Franklin County. The region is rich in scenic, natural, cultural, and historic features that are appealing to travelers. Tourism also plays an increasingly important role in the region's economy. The Massachusetts Office of Travel and Tourism (MOTT) estimated that in 2013 domestic travelers in Franklin County spent over \$58 million (source: *MOTT's Economic Impact of Travel on Massachusetts Counties, CY2013*). This was a 25% increase from traveler expenditures in 2009. Consequently, visitors to the area are a significant contributor to the local economy and essential to the economic viability of the region. Additionally, recent economic data quantifies the significance of the creative economy of the region. These resources are important to consider as part of any transportation planning activities.

Scenic Byway Related Tourism

The scenic, natural, recreational, historic, and cultural resources along the byways appeal to a wide range of interests. As previously noted, byway travelers experience a diverse landscape that includes the classic mill towns of New England, rolling hills, rural farmland, historic architecture, mountains, river valleys, and spectacular vistas. The byways cater to a variety of outdoor activities ranging from hiking, picnicking, kayaking, canoeing, fishing, to skiing. Each byway has a unique history that is representative of different periods of time. In addition, there are many artisans who currently live and work in the area and provide opportunities to experience their crafts. The byways of Franklin County are a region-wide network for travelers to explore these diverse and rich resources.

It is important that tourist information and services be available to travelers. Information including publications, brochures, maps, websites, and telephone numbers are crucial to encouraging tourism along the scenic byways. The corridor management plans for the scenic byways contain an inventory of the cultural, historical, natural, scenic, recreational, and commercial resources within each byway area. Through the Scenic Byway Marketing Project enhanced informational resources and the byway website were developed to assist visitors to the area and byway travelers.

Bicycle Tourism

Bicycle tourism has increasingly been recognized as an important component of the Franklin County tourism industry. The region has many low volume, scenic roads that provide excellent bicycle touring routes. The significance of bicycle tourism and the increasing number of people who are traveling to Franklin County to bicycle was emphasized during the public input sessions held during the development of the *2009 Franklin County Bikeway Plan Update*. This updated plan included the following two goals related to bicycle tourism: 1) encourage bicycling as a regional tourism activity and complete measures which will identify Franklin County as a great place to come and bicycle, and 2) identify bicycle routes that could encourage tourism throughout Franklin County. The Plan further recommended the creation of promotional materials for the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) to promote bicycling in the region. It also recommended the creation of advertisements to be used in bicycling magazines and websites promoting bicycling in Franklin County. The goal of promoting bicycle tourism was also included in the *2008 Massachusetts Bicycle Transportation Plan* to “develop bicycle tourist publications through the Massachusetts Office of Travel and Tourism (MOTT).”

The FRCOG has already created four bicycling maps for the region. The maps highlight the Franklin County Bikeway routes (both off-road bike paths and shared roadway sections),

elevation change, water stops, the services along the way, and other information that may be helpful to cyclists. Travel to Franklin County via the Amtrak rail service does not currently allow passengers to carry bicycles onto the train as luggage. It is important to the regional tourism economy that bikes and skis are allowed on this Amtrak passenger service.

Promotion of Regional Tourism

The regional tourism and hospitality industry are important considerations as the future of the regional transportation system is planned. Currently, local business representatives and economic development practitioners are focusing efforts on particular niches of the tourism industry, such as agri-tourism, eco-tourism, heritage tourism, and cultural tourism related to artists and craftspeople. Farm stands, maple sugar houses serving pancakes, and other forms of interactive experiences are growing in the agricultural industry of Franklin County. Eco-tourism activities include outdoor recreation such as rafting and skiing as well as education-related opportunities, like guided nature hikes. Future transportation planning should reinforce and build on this momentum in the region to promote all of the region's many tourism opportunities.

Recommendations for Scenic Byways

- Continue work to permanently protect scenic and agricultural lands along the scenic byways by purchasing conservation restrictions and/or agricultural preservation restrictions from willing landowners.
- Continue work to develop initiatives to market the byways of Western Massachusetts as travel destinations.
- Implement the recommendations of the corridor management plans for each of the scenic byways.

Recommendations for Tourism

- Develop marketing and informational resources to promote Franklin County as a travel destination.
- Provide information and resources to encourage tourism opportunities related to bicycling throughout the county.
- Create promotional materials for the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) to use in their promotional campaigns.

- Encourage the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) organizations to include information on bicycling in Franklin County in their tourism materials.
- Create advertisements to be used in bicycling magazines and websites promoting bicycling in Franklin County.
- Advocate for bikes and skis to be allowed on Amtrak regional rail service.

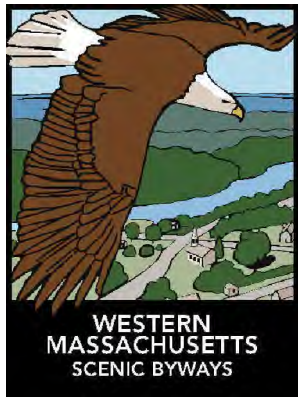


Rafters on the Deerfield River in Franklin County.

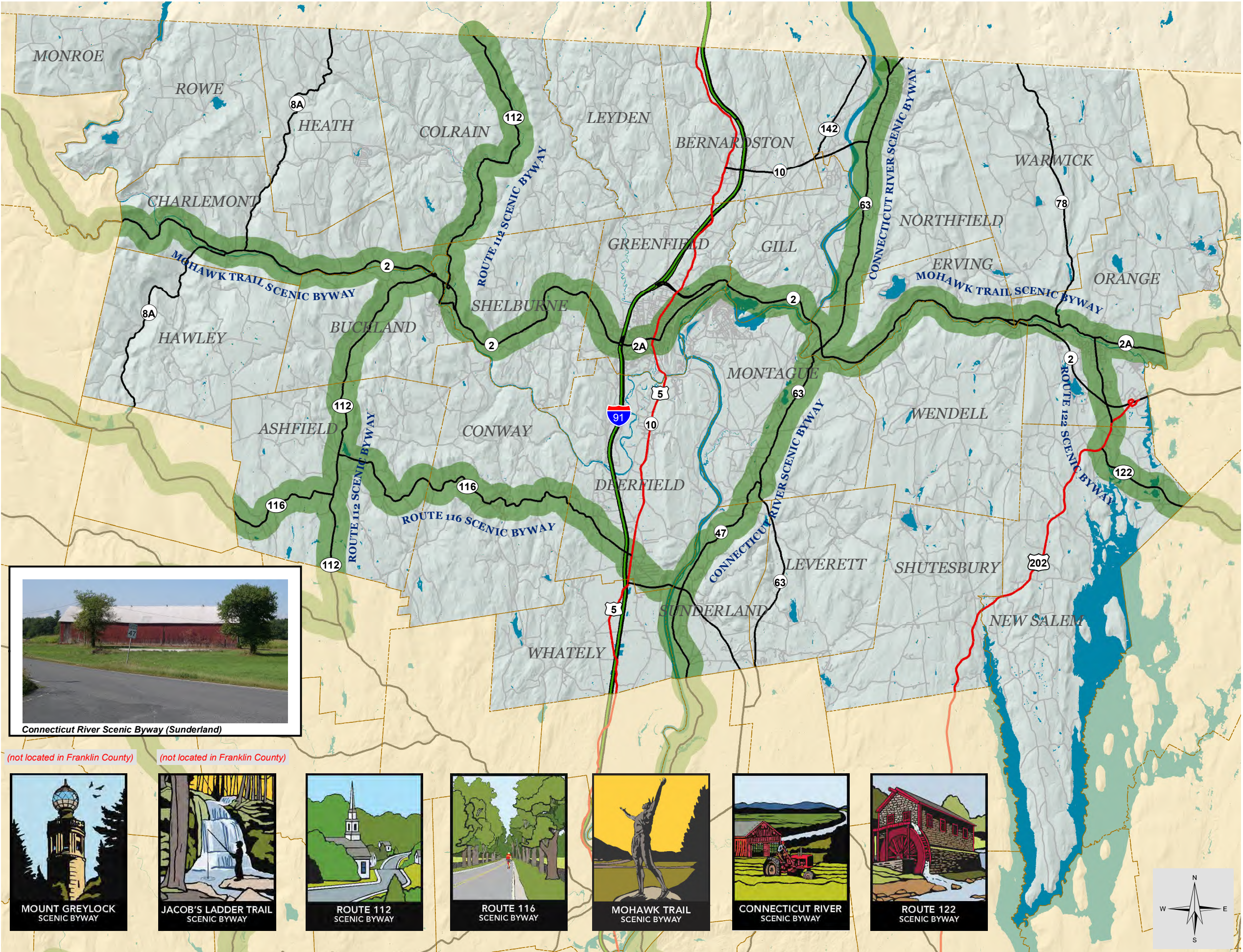
Franklin County Massachusetts

Federal & State Designated Scenic Byways

Scenic Byway

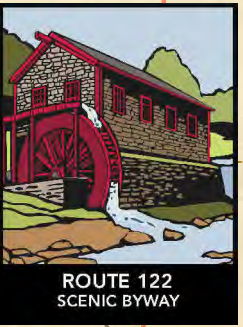
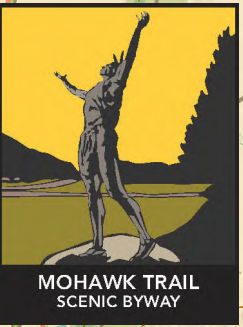
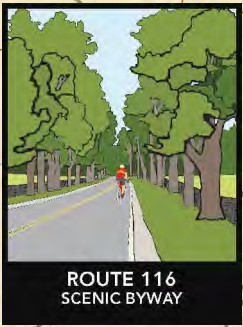
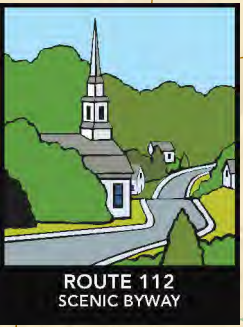
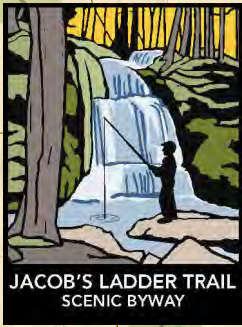
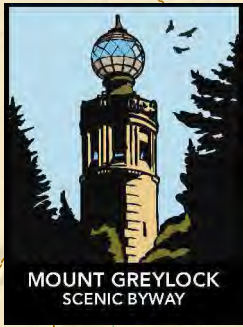


Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



(not located in Franklin County)

(not located in Franklin County)



12

Sustainability & Climate Change



2016 Regional Transportation Plan

12 Sustainability and Climate Change

The promotion of energy efficient and sustainable transportation systems is an issue that has increasingly become a priority both regionally and nationally. Higher fuel costs and concerns related to climate change have contributed to a strengthening focus on reducing the personal use of automobiles and also on using new and developing technologies that create more fuel efficient and cleaner burning vehicles.

Climate change is a result of global warming, which is largely caused by human activities, specifically the production of greenhouse gases (GHG). Greenhouse gas emissions are caused by everyday activities, such as the generation of electricity and the operation of motor vehicles. While electricity was the largest contributor (31%) of GHG emissions in the United States in 2013, the transportation sector comes in at a close second at 27 percent. It is projected that transportation will continue to account for more than one-third of Massachusetts' total GHG emissions in 2020. The consequences of climate change are expected to include increased numbers of very hot days, higher average rainfall and temperatures, and more severe storms. These effects will also, in turn, impact the performance of our infrastructure. As a result, these variables must be examined when planning for the future of the transportation system in Franklin County, because the decisions that are made today, "particularly those related to the redesign and retrofitting of existing transportation infrastructure or the location and design of new infrastructure, will affect how well the system adapts to climate change far into the future."¹

Sustainable transportation and the reduction of GHG's is a priority for the Franklin County Transportation Planning Organization (FCTPO). This chapter will discuss ongoing and recommended initiatives that encourage sustainable transportation and, therefore, the mitigation of GHGs in the region. In addition, this chapter will examine ways in which the transportation infrastructure system can be adapted to the changing conditions that climate change will bring to the region.

Guiding Policies, Programs and Plans

The Commonwealth of Massachusetts, FRCOG, and other regional organizations have demonstrated their commitment to reducing GHG emissions. Within the past few years, the following policies and plans have been enacted to help reduce the level of GHGs.

¹ Transportation Research Board (TRB). Potential Impacts of Climate Change on U.S. Transportation. TRB Special Report 290. 2008.

Metropolitan Planning Organizations and the Global Warming Solutions Act

The Commonwealth's Global Warming Solutions Act (GWSA) of 2008 requires statewide reductions in greenhouse gas (GHG) emissions of 25 percent below 1990 levels by the year 2020, and 80 percent below 1990 levels by 2050. As part of the GWSA, the Executive Office of Energy and Environmental Affairs developed the Massachusetts Clean Energy and Climate Plan (CECP), which outlines programs to attain the 25 percent reduction by 2020 – including a 7.6 percent reduction that would be attributed to the transportation sector.

The Commonwealth's thirteen metropolitan planning organizations (MPOs) are integrally involved in helping to achieve greenhouse gas reductions mandated under the GWSA. The MPOs work closely with the Massachusetts Department of Transportation (MassDOT) and other involved agencies to develop common transportation goals, policies, and projects that would help to reduce GHG emission levels statewide. For example, one of the programs in the CECP is MassDOT's sustainability initiative known as GreenDOT. GreenDOT policy goals were developed in accordance with the GWSA, and are as follows:

- Reduce greenhouse gas (GHG) emissions
- Promote the healthy transportation modes of walking, bicycling, and public transit
- Support smart growth development

The FCTPO shares in these goals and is working to meet the specific requirements of the GWSA regulation – *Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation (310 CMR 60.05)*. The purpose of this regulation is to assist the Commonwealth in achieving their adopted GHG emission reduction goals by:

- Requiring MassDOT to demonstrate that its GHG reduction commitments and targets are being achieved
- Requiring each MPO to evaluate and track the GHG emissions and impacts of its Regional Transportation Plan and Transportation Improvement Program
- Requiring each MPO, in consultation with MassDOT, to develop and utilize procedures to prioritize and select projects in its RTP and TIP based on factors that include GHG emissions and impacts

Meeting the requirements of this regulation will be achieved through the transportation goals and policies contained in the 2016 Regional Transportation Plans, the major projects planned in the RTPs, and the mix of new transportation projects that are programmed and implemented through the Transportation Improvement Program. The GHG tracking and evaluation processes enable the MPOs to identify the anticipated GHG impacts of the

planned and programmed projects, and also to use GHG impacts as a criterion in prioritizing transportation projects. This approach by the MPO is consistent with the greenhouse gas reduction policies of promoting healthy transportation modes through prioritizing and programming an appropriate balance of roadway, transit, bicycle and pedestrian investments; as well as supporting smart growth development patterns through the creation of a balanced multi-modal transportation system. All of the MPOs and MassDOT are working toward reducing greenhouse gases with plans, actions, and strategies that include (but are not limited to):

- Reducing emissions from construction and operations
- Using more fuel-efficient fleets
- Implementing and expanding travel demand management programs
- Encouraging eco-driving
- Providing mitigation for development projects
- Improving pedestrian, bicycle, and public transit infrastructure and operations (healthy transportation)
- Investing in higher density, mixed use, and transit-oriented developments (smart growth)

Regional GHG Tracking and Evaluation in RTPs

MassDOT coordinated with MPOs and regional planning agency (RPA) staffs on the implementation of GHG tracking and evaluation in development of each MPO's 2012 RTPs, which were adopted in September 2011. This collaboration has continued for the MPO's 2016 RTPs and 2016-19 TIPs. Working together, MassDOT and the MPOs have attained the following milestones:

- Modeling and long-range statewide projections for GHG emissions resulting from the transportation sector for use before final RTP endorsement. Using the Boston MPO's regional travel demand model and the statewide travel demand model for the remainder of the state, GHG emissions will be projected for 2020 no-build and build conditions, and for 2040 no-build and build conditions. The results of this modeling will be available before the endorsement of this RTP and the MPO staff will present on the results to the MPO membership before a vote on endorsement.
- All of the MPOs will include GHG emission reduction projections in their RTPs, along with a discussion of climate change and a statement of MPO support for reducing GHG emissions as a regional goal.

MassDOT, using its statewide travel demand model, will provide the FCTPO with statewide estimates of CO₂ emissions resulting from the collective list of all recommended projects in

all the Massachusetts RTPs combined (and supplemented by CO₂ emission reduction results for smaller, “off-model” projects supplied by the MPOs). Emissions will be estimated using the new (2014) MOVES model, and also incorporate the latest planning assumptions including updated socio-economic projections for the Commonwealth.

The project mix from this RTP (and all other RTPs) – modeled for both 2020 and 2040 using an Action (Build) vs. Baseline (No-Build) analysis to determine the CO₂ emissions attributed to all MPO’s mix of projects and smart-growth land use assumptions – is expected to show a neutral shift toward meeting the statewide greenhouse gas emissions reduction goal of 25 percent below 1990 levels by the year 2020, and 80 percent below 1990 levels by 2050. The reason for the anticipated neutral shift is that early indicators have shown that major infrastructure projects, both individually and collectively, would not trigger a significant change in GHG emission levels.

Working closely with MassDOT, the FCTPO continues to make efforts toward progress through planning activities to meet the GHG reductions targets and complying with the requirements of the GWSA. As part of this activity, the FCTPO will provide further public information on the topic and will continue to advocate for steps needed to accomplish the FCTPO’s and Commonwealth’s goals for greenhouse gas reductions.

The FCTPO certifies that it has made efforts to minimize the GHG emissions and impacts from the recommended projects (see certification at the end of this chapter. Potential TIP projects are subjected to an evaluation process using Transportation Evaluation Criteria (TEC). The TEC scores proposed projects in six different topic areas: condition, mobility, safety, community effects, land use & economic development, and environmental effects. The last criterion, environmental effects, specifically examines a project’s potential impact on air quality and climate. In addition to minimizing the GHG impacts from proposed projects, the FRCOG staff has sought public input on how to further reduce GHGs in the region. This topic received the most attention during the public meetings for the development of this RTP.

HUD-DOT-EPA Interagency Partnership for Sustainable Communities

In 2010, the U.S. Department of Housing and Urban Development (HUD) announced the Sustainable Communities Planning Grant Program. In the 2010 Budget, Congress provided a total of \$150 million to HUD for the Sustainable Communities Initiative to improve regional planning efforts that integrate housing and transportation decisions and increase the capacity to improve land use and zoning. In the Fall of 2010, a consortium, with FRCOG as lead partner, received a \$425,000 grant under this program for Franklin County. Through

this grant, the FRCOG created *Sustainable Franklin County: a Regional Plan for Sustainable Development*. The goals and recommendations in the plan were identified through an extensive public outreach process and focus on sustainable development within the context of a rural region. It not only examines issues associated with transportation, but also comprehensively looks at the effects of land use, housing, economic development, natural and cultural resources, and land use and infrastructure on sustainability.

Green Communities

In 2008, Massachusetts created the Green Communities Program which uses funding from auctions of carbon emissions permits under the Regional Greenhouse Gas Initiative to reward communities that achieve Green Communities designation by meeting five clean energy benchmarks:

1. Adopting local zoning bylaws or ordinances that allow “as-of-right siting” for renewable and/or alternative energy R & D facilities, manufacturing facilities or generation units;
2. Adopting an expedited permitting process related to the as-of-right facilities;
3. Establishing a municipal energy use baseline and a program to reduce use by 20 percent within five years;
4. Purchasing only fuel-efficient vehicles for municipal use; and
5. Requiring all new residential construction over 3,000 square feet and all new commercial and industrial real estate construction to reduce lifecycle energy costs (i.e., adoption of an energy-saving building “stretch code”).

Currently, 16 towns in Franklin County are officially designated as Green Communities and are eligible to receive funding grants.

Massachusetts Clean Cities

The Clean Cities program is a national U.S. Department of Energy program that seeks to reduce petroleum consumption in the transportation network. The Massachusetts Clean Cities Coalition offers training, assistance, and program support necessary to promote alternative transportation throughout the Commonwealth. It also administers the

Massachusetts Electric Vehicle Initiative (MEVI) which aims to increase the battery, fuel cell, and plug-in hybrid electric vehicles. Related to this, there are several electric vehicle



**Electric car charging in a downtown
Greenfield municipal parking lot.**

charging stations in the region. Three are located in Greenfield, including one high power station that can charge cars in 15-30 minutes. There are also multiple charging stations located just outside of Franklin County in Amherst and Northampton.

Alternative Transportation Plan

In 2009, the FRCOG created the *Alternative Transportation Plan* that examined ways to encourage alternative forms of transportation other than the singly-occupied vehicle. Some of the Plan's recommendations are summarized here:

- Continue implementation of the 2009 *Franklin County Bikeway Plan Update*,
- Continue implementation of the 2008 *Franklin County Park and Ride Study*;
- Support passenger rail in the region;
- Promote ridesharing efforts;
- Improve bus transit to attract residents wishing to park and ride, and increase the level of service for lower-income people and elderly.

Many of the recommendations in the *Alternative Transportation Plan* are part of ongoing efforts by the FRCOG, FRTA, and other organizations in the region and are described in more detail in the next section.

Current Planning Activities

The FRCOG recognizes the rural nature of the Franklin County region and acknowledges that traveling by automobile is often the most convenient or only option. However, with increases in the cost of fuel and more attention being focused on environmental issues, it is important to discuss options for reducing dependence on the single-occupied vehicle and increasing alternative transportation options. The Franklin County region and the FRCOG have been working on bringing sustainable transportation to the area and mitigating GHGs. In fact, the FRCOG recently received an Excellence in Commuter Options (ECO) Award from the state for its work in supporting and promoting alternative transportation in Franklin County. This section highlights the many planning activities that have recently been completed or are ongoing in this topic area.

Park and Ride Lots

Park and ride lots provide an opportunity to those who do not live on or within walking distance of public transit routes to travel to an intermediary location and take public transportation or carpool with other commuters. There are currently several park and ride lots in Franklin County. They include:

- Charlemont Park & Ride (Route 2)
- Whately Park & Ride (Route 116/5/10)
- Greenfield Visitors Center Park & Ride

- Sunderland Park & Ride (Route 47)

In 2014, FRCOG published the *Evaluation of Franklin County Park and Ride Facilities* which assessed the performance of the existing park and ride lots. The study found that the majority of the



MassDOT Park and Ride lot in Whately on Route 5/10.

park and rides had consistent and regular use. Most of the lots had utilization rates between 20 percent and 35 percent, which show that the lots are being used but that they have additional capacity for more users. The Charlemont Park & Ride is the least used facility with a utilization rate of only 8 percent. The study recommended that marketing of these facilities be conducted as residents of the region may be unaware of their presence.

Ridesharing

There are several programs and internet-based resources that promote carpooling or “ridesharing” in Franklin County and the wider region. The major program to encourage ridesharing across Massachusetts is through MassRIDES, which is a MassDOT-run program. MassRIDES provides travel assistance by providing information about transportation alternatives, including: transit, biking, and walking. It helps employers to establish vanpool or carpool options for employee commutes. There are also several other locally-based internet rideshare resources that attempt to connect ride-seekers with drivers offering rides within the region. They include: RideBuzz.org and Craigslist.org.

Shared Vehicle Program

Car sharing is defined as the joint access and ownership of a car. For individuals who do not need a car every day, it is a way to have a car when you really need one while relying on alternatives for most trips. Zipcar is a national vehicle sharing program that is available in Massachusetts. This service allows users to pay a fixed rate for the use of a vehicle that they are able to reserve when they need it. Members can reserve cars for time periods ranging from just hours to many days. These reservations include the cost of fuel, insurance, and reserved parking. Presently, there are six Zipcars located in Amherst and four Zipcars in downtown Northampton. There are no Zipcars sited in Franklin County.

Promote Walking and Bicycling

There has been a lot of support in Franklin County for increased walking and bicycling. Bicycling and walking play a large role in community livability by impacting the environment, community health and wellness, and the transportation network. Shifting to these transportation modes can result in a significant decrease in transportation-related GHG emissions, while promoting the health of residents. In Franklin County, several reports and studies have examined the safety and security of the pedestrian and bicyclist transportation network and have sought to increase the quality and quantity of these facilities. Chapter 10 summarizes in detail the efforts to encourage bicycling and walking in the region.



Canalside Trail in Turners Falls

Increase Use of the Public Transit System

In Franklin County, several reports and studies have examined the demand for public transit in the region. The following studies and reports have focused on transit service and include: *Alternative Transportation Plan*, *West County Transit Study*, *North County Transit Study*, and *Survey of Select Populations Regarding Transit Service*. The major strength of the transit system is that most of the major commuting routes within Franklin County are currently being served by public transit. Another beneficial aspect of the public transit system is the inclusion of bicycle racks on all of the buses. This coordination between various modes of transportation can help decrease dependence upon the single occupant motor vehicle and help mitigate GHG emissions. On the other hand, these studies and public outreach has shown that a weakness with the current status of transportation options within Franklin County is the limited service of public transit. This is primarily due to the high cost of providing transit service to such a rural population. See Chapter 9: “Transit and Paratransit Services,” for recommendations on how to improve the public transit system in Franklin County.

Alternative Transportation Map

One of the ways the FRCOG is working to promote mode shift and healthy transportation options is through the creation of an alternative transportation map. Building on the work of the Massachusetts Department of Energy Resources (DOER) and MassRIDES, the maps will

show areas of concentrated transit service, including Greenfield Community College, Deerfield, Orange, and Shelburne Falls, and will highlight the available connections to the alternative transportation network, such as bicycle routes, shared-use paths, and park and ride lots. In addition to providing information on the available transportation alternatives, this effort will also include a report and map identifying where barriers to use of alternative transportation still exist, thus creating an opportunity to reduce these barriers and increase the connectivity of the alternative transportation network.

Passenger Rail in the Region

In 2014, passenger rail returned to Franklin County with the Amtrak “Vermont” service stopping at the new rail station constructed at the John W. Olver Transit Center. This service, running on the recently improved Knowledge Corridor, connects Springfield, MA and White River Junction, VT with two runs per day – one northbound and one southbound. In addition to this newly established service, there is also planning work underway to establish a regional rail system with more frequent commuter-like service between Greenfield and Springfield. See Chapter 7: “Passenger Rail,” for more information on passenger rail in the region.

Telecommunications

Telecommuting can help decrease GHG emissions by allowing workers to eliminate some daily commutes and work from home instead. It is anticipated that the number of employees telecommuting in Franklin County will continue to increase in the future. This is due in large part to the recent and pending expansion of the telecommunications infrastructure and high-speed internet services in the region.

Improve Traffic Operations

Reduce Congestion and Travel Time

The time vehicles spend idling in traffic congestion is a direct contributor to GHG emissions. In order to prevent idling and decrease time spent in traffic, the efficiency of the transportation network needs to be examined. The 2012 Greenfield Signals Improvement Project included the redesign of eight signalized intersections in Greenfield to improve the intersection efficiency and decrease emissions.

Improve Communication and Notification

Technology can help improve the efficiency of the transportation network through driver communication and advanced notice of incidents to users of the transportation network. Improvements in communication may include better and more frequent use of variable message signs to notify drivers of upcoming construction schedules or delays. Another form

of notification is the Massachusetts Travel Advisory System which is a free service provided for the Commonwealth in which a motorist can call 511 to see if a select number of major roadways are experiencing congestion. This service includes Interstate 91 and Route 2 in western Massachusetts. Motorists who are aware of an incident can take an alternate route, which will result in an avoidance of the congestion and a decreased travel time.

Adaption of Transportation Infrastructure to Climate Change

Transportation-related GHG emissions contribute significantly to climate change. In turn, however, climate change will also have an impact on the transportation system. A special report from the Transportation Research Board (TRB), “Potential Impacts of Climate Change on U.S. Transportation,” determined that the following impacts on the transportation system can be expected:

- Prolonged hot days lead to increased risk of wildfire;
- Compromised pavement integrity (hotter weather = softer pavement and increased rutting from traffic);
- Deformed rail lines;
- Adversely affected bridge operation due to thermal expansion of bridge joints;
- Increased flooding and inundation of bridges, roads and rail lines; and
- Heavier rainfall will require redesign and replacement of drainage structures.

It is clear that not only does the county need to take an active role in reducing GHG emissions by promoting sustainable transportation, but it also needs to plan for these potential changes and their impact on transportation infrastructure. The following strategies are aimed at preparing for the impacts of climate change on the future of the transportation system and the incorporation of this concern into planning practices.

Plan for More Severe and Frequent Flooding in the Region

A safe transportation system protects users from hazards, including hazards resulting from climate-related stresses on the system. It is expected that more extreme weather events will lead to more precipitation and flooding. It is critical that infrastructure be planned and maintained to be able to withstand a higher frequency of these events. Tropical Storm Irene in August 2011 provided crucial information on the vulnerability of the transportation network in the event of major flooding. This event flooded and washed out many roads and bridges in the region. Such events may be more severe in the future, so a revised examination of potential flooding areas and critical infrastructure should be performed for the whole region. The FRCOG has prepared updated flood maps with evacuation routes for each municipality in order to assess changes in flooded areas as a result of climate change and its effects on emergency preparedness.

Preserve Aspects of the Transportation System that are Threatened by Climate Change

More prolonged heat spells and hotter days are expected with climate change, along with increased precipitation events. These effects will directly impact pavement condition. Warmer days will result in the softening of the pavement for longer periods of time and may lead to more rutting. Additional concerns regarding stormwater runoff should be examined when updating or redesigning the roadway network to accommodate the potential need for more drainage. FRCOG has developed a Pavement Management Program for the region to monitor this critical component of the transportation infrastructure.

Improve Emergency Response Times via an Updated GIS Network

There are several tools which can aid in improving emergency response to an event. Emergency vehicle preemption is one proactive tool that can be used. Another aspect of emergency response is the accuracy of the information emergency responders use to reach an event. The FRCOG has identified changes to the Road Inventory File (RIF), which contains information used by emergency responders about the transportation network. The updated RIF will help improve emergency response times.

Recommendations for Transportation and Climate Change

The transportation sector is the second largest contributor to GHG emissions, which are a primary cause of climate change. There are many steps that have already been taken in the region to help mitigate GHG emissions. The region has also taken a proactive role in preparing for the impact of climate change on the regional transportation system. This chapter demonstrates how Franklin County is working towards the state's goal of reducing GHG as laid forth in the Massachusetts Clean Energy and Climate Plan for 2020.

Recommendations

- Continue to promote a reduction in GHG emissions in the region through the mitigation strategies described in the chapter.
- Continue to promote sustainable and alternative forms of transportation to the singly-occupied motor vehicle.
- Develop local and regional emergency action plans for events related to climate change.
- Continue to implement a Pavement Management System for the county.

13

Safety & Security



2016 Regional Transportation Plan

13 Transportation Safety & Security

Transportation Safety

The safety of the transportation network can strongly impact travel patterns and behaviors as well as the health of a community. Many factors influence the safety of the transportation network including the road environment, road user, and vehicle factors. The overall goal for traffic safety is to minimize the consequences or the probability of a vehicle being involved in a hazardous situation.¹ For Franklin County, this most often results in safety treatments on existing roadways that range from routine maintenance to complete intersection redesign. The most critical components of a safe, secure, and efficient transportation network are coordination and communication among emergency personnel, law enforcement officers, and the users of the transportation network.

Guiding Policies and Programs

In 2013, MassDOT completed an update to the *Massachusetts Strategic Highway Safety Plan (SHSP)* that examined transportation safety in the Commonwealth from a variety of perspectives. The 2013 SHSP identified 15 emphasis areas, each addressing a contributing crash factor. The emphasis areas are grouped into three tiers:

- Strategic emphasis areas represent at least 10 percent of annual fatalities or severe injuries on Massachusetts roadways;
- Proactive emphasis areas represent less than 10 percent of annual fatalities or serious injuries; and
- Emerging emphasis areas focus on improvement of traffic safety and crash data systems.

Franklin County's safety efforts generally fall within the Strategic emphasis areas, particularly regarding Intersections, Lane Departures, Pedestrians, and Bicycles. These themes examine crash and injury data to determine ways to reduce infrastructure-related and user-related issues. Much of the safety-related issues in Franklin County are the result of infrastructure issues and conflicts between motorists and to a lesser extent, between motorists and pedestrians/bicyclists.

The Highway Safety Improvement Program (HSIP) is a federal transportation funding program under MAP-21 to achieve reductions in traffic fatalities and serious injuries on all public roads. For a highway safety improvement project to be eligible for HSIP funding

¹ Evans, Leonard. Traffic Safety, Science Service Society. Bloomfield Hills, Michigan. 2004.

through the regional Transportation Improvement Program (TIP), it must meet certain criteria:

- The candidate project must be consistent with the State SHSP and correct or improve a hazardous road location or feature or address a highway safety problem.
- The project location must originate from a comprehensive list of high crash locations. The primary sources of data are the MassDOT database (based on the RMV Crash Data System) and the High Crash Locations report. The High Crash Locations report identifies crash clusters based on weighted severity of geo-located crashes. For a crash cluster to be eligible for HSIP, the total number of “equivalent property damage only” crashes must be within the top 5 percent of all crash clusters in that region (the “equivalent property damage only” method of weighting crash severity is described in further detail later in this chapter). Regional planning agencies may also use their own edited data to more accurately rank locations within their region, as the FRCOG does with the Most Hazardous Intersections in Franklin County report.
- All HSIP project candidate locations must be evaluated with a Road Safety Audit.

Background

Traffic incidents have a direct impact on the safety of a community as well as the operations and security of the transportation network. Nationally, in 2013 alone, over 2 million people were injured in traffic-related incidents and almost 33,000 people lost their lives.² This is the equivalent of 90 people dying each day, or one life lost every 16 minutes. Fatal traffic crashes were the leading cause of death for persons aged 5 to 24.³ The national fatality rate, however, has declined by more than 25 percent since 2003. Massachusetts continues to have the lowest fatality rate (0.64 per 100 million VMT) in the country in 2012.⁴

Table 13-1 presents a summary of traffic-related fatalities for each county in Massachusetts, from 2009 to 2013. Franklin County ranks among the lowest (next to Nantucket and Dukes Counties) in the number of traffic-related fatalities per year. Over the five year period from 2009 to 2013, there were 23 traffic-related fatalities in Franklin County. Overall, this represents a 44 percent decrease compared to the five year period from 2004 to 2009, in which 41 traffic-related fatalities occurred in Franklin County. Across the state a similar trend is observed with a 48 percent decrease from the previous five-year total. The recent decline in traffic related fatalities at both the state and county levels from 2009 to 2013 denotes a positive trend that should continue to be monitored.

² National Highway Traffic Safety Administration, Traffic Safety Facts Research Note, December 2014.

³ National Center for Health Statistics, National Vital Statistics System, 2013 data.

⁴ Insurance Institute for Highway Safety, Highway Loss Data Institute, 2012 data.

**Table 13-1: Traffic Related Fatalities in Massachusetts
by County, 2009-2013**

County	Fatalities					Total
	2009	2010	2011	2012	2013	
Barnstable County	15	17	22	26	16	96
Berkshire County	16	14	14	13	8	65
Bristol County	37	49	57	50	35	228
Dukes County	1	2	0	2	1	6
Essex County	38	31	42	45	33	189
Franklin County	1	5	5	5	7	23
Hampden County	32	34	30	36	29	161
Hampshire County	11	6	8	9	7	41
Middlesex County	64	46	56	50	37	253
Nantucket County	0	0	0	0	0	0
Norfolk County	36	34	27	43	25	165
Plymouth County	25	29	35	31	43	163
Suffolk County	21	26	24	29	22	122
Worcester County	43	54	54	44	63	258
Massachusetts	340	347	374	383	326	1770

Source: National Highway Traffic Safety Administration, U.S. Department of Transportation. Traffic Safety Facts for Massachusetts: 2009 - 2013. Fatalities (All Crashes).

The number of traffic-related pedestrian fatalities in Massachusetts increased overall in the five year period from 2009 to 2013, shown in Table 13-2. This is similar to the trend nationally over this same period.⁵ Between 2009 and 2013, the number of traffic-related deaths of pedalcyclists (bicyclists and other riders of wheeled vehicles powered solely by pedals, e.g. tricycles and unicycles) in Massachusetts was rather consistent, except for a spike in 2012. Nationally, pedalcyclist fatalities have been increasing each year since 2011.⁶

**Table 13-2: Pedestrian and Cyclist Traffic Fatalities in
Massachusetts, 2009-2013**

Mode	Fatalities					Total
	2009	2010	2011	2012	2013	
Pedestrian	48	58	58	72	68	304
Pedalcyclist	6	6	5	15	6	38

⁵ National Highway Traffic Safety Administration, Pedestrians Traffic Safety Fact Sheets, 2009-2013.

⁶ National Highway Traffic Safety Administration, Bicyclists and Other Cyclists Traffic Safety Fact Sheets, 2009-2013.

Identification of the Most Hazardous Intersections in Franklin County

Approximately every three years the FRCOG conducts an analysis of crash data to determine high crash locations in the county. All crashes resulting in estimated property damage in excess of \$1,000, injuries, or fatalities must be reported to and recorded by police. Those involved in the crash or the investigating police officer must complete a standard report form and forward it to the Massachusetts Registry of Motor Vehicles (RMV). This data is used to create the Most Hazardous Intersection Report, which was most recently updated in 2012 and covers the crashes recorded between 2007 and 2009.

From 2007 through 2009, there were 3,454 crashes in Franklin County. The majority of these crashes occurred in Greenfield (1,003 crashes), Deerfield (442), Orange (389), and Montague (343). These towns are the most densely developed and/or most trafficked areas of the county. To determine how hazardous each intersection is, a nationally recognized measure called “Equivalent Property Damage Only” (EPDO) was applied to each crash.

EPDO assigns points to each crash based on its severity. There are three crash severity levels: “property damage only” which is assigned one point; “injury” which is assigned five points; and “fatality” which is assigned ten points. Only one category is assigned to each crash, reflecting the most serious crash level. For further analysis, the EPDO rate per Million Entering Vehicles (MEV_{EPDO}) is calculated to weigh the severity of crashes at an intersection by the volume of traffic entering the intersection. In this way, the MEV_{EPDO} reflects both the severity of crashes as well as the rate of exposure to crashes.

Using the results of the MEV_{EPDO} calculation, the top fifty most hazardous intersections were ranked and the results are contained in Tables 13-3 and 13-4 and shown on a map at the end of Chapter 5. The map shows that the vast majority of the identified hazardous intersections are located within the most heavily traveled corridors in the county. Due to a tie for 50th place, there are actually 51 intersections on the list. The town with the largest number of hazardous intersections on the list was Greenfield (16 intersections), followed by Montague (12 intersections), and Deerfield (6 intersections). Of the 51 most hazardous intersections, 23 appeared on the previous list of the top 50 most hazardous intersection in Franklin County produced from crash data from 2004 through 2006.

The most hazardous intersection in Franklin County was G Street at Eleventh Street in Turners Falls at a stop-controlled intersection. Although only three crashes were reported at this intersection within the analysis period, two resulted in injuries and the traffic volume is comparatively low, approximately 1,000 vehicles per day. This resulted in an MEV_{EPDO} of 10.05, indicating a high rate of exposure to crashes at this intersection.

Table 13-3: Most Hazardous Intersections in Franklin County, Rank 1 - 25

Rank	Town	Intersection	Number of Crashes	EPDO Total	MEV _{EPDO} Rate	MEV _{CRASH} Rate	MEV _{CRASH} Rate Comparison	MassDOT MEV _{CRASH} Rate	Type of Control
1	Montague	G St./Eleventh St.	3	11	10.05	2.73	>	0.67	Unsignalized
2	Orange	Myrtle St./Pleasant St.	4	12	5.48	1.82	>	0.67	Unsignalized
3	Montague	Route 63/North Leverett Rd.	10	27	4.36	1.62	>	0.67	Unsignalized
4	Erving	Route 63/Semb Dr./Forest St.	3	11	4.19	1.14	>	0.67	Unsignalized
5	Greenfield	Wells St./Allen St.●	8	28	3.82	1.09	>	0.67	Unsignalized
6	Orange	Route 202/Route 122	11	31	3.77	1.34	>	0.67	Unsignalized
7	Montague	Montague City Rd./Turnpike Rd.	8	24	3.37	1.12	>	0.67	Unsignalized
8	Northfield	Route 10/Gill Center Rd.	7	27	2.98	0.77	>	0.67	Unsignalized
9	Greenfield	High St./Maple St.	12	28	2.97	1.27	>	0.67	Unsignalized
10	Buckland	Route 2/Route 112 South	3	16	2.92	0.55	<	0.61	Unsignalized
11	Greenfield	I-91/Route 2 Rotary	35	95	2.76	1.02	>	0.67	Unsignalized
12	Gill	Route 2/Main Road	16	49	2.76	0.9	>	0.83	Signalized
13	Greenfield	Conway St./Devens St.	3	11	2.7	0.74	>	0.67	Unsignalized
14	Greenfield	Chapman St./Pierce St.	4	12	2.58	0.86	>	0.67	Unsignalized
15	Montague	Route 47/North Leverett Rd.	4	12	2.49	0.83	>	0.67	Unsignalized
16	Montague	L St./Third St.	7	19	2.41	0.89	>	0.67	Unsignalized
17	Greenfield	Main St./Hope St.	14	38	2.4	0.88	>	0.67	Unsignalized
18	Montague	Turnpike Rd./Walnut St.	3	11	2.36	0.64	<	0.67	Unsignalized
19	Deerfield	Route 116 (North)/Route 5&10●	20	48	2.34	0.97	>	0.83	Signalized
20	Montague	Turners Falls Rd./Swamp Rd.	3	11	2.32	0.63	<	0.67	Unsignalized
21	Deerfield	Route 5&10/North Main St.●	15	27	2.26	1.26	>	0.67	Unsignalized
22	Greenfield	Route 2A/River St.	15	43	2.19	0.76	<	0.83	Signalized
23	Orange	East Main St./Water St.	8	20	2.15	0.86	>	0.67	Unsignalized
24	Montague	Avenue A/Fifth St.	8	16	2.09	1.04	>	0.67	Unsignalized
25	Whately	Route 5&10/Christian Ln.●	4	12	2.06	0.69	>	0.67	Unsignalized

Table 13-4: Most Hazardous Intersections in Franklin County, Rank 26 - 50

Rank	Town	Intersection	Number of Crashes	EPDO Total	MEV _{EPDO} Rate	MEV _{CRASH} Rate	MEV _{CRASH} Rate Comparison	MassDOT MEV _{CRASH} Rate	Type of Control
26	Montague	Unity St./Park St./Chestnut St.	8	20	2.04	0.82	>	0.67	Unsignalized
27	Greenfield	Colrain St./Elm St.	6	15	2.04	0.82	<	0.83	Signalized
28	Erving	Route 2/Route 2A	8	20	2.01	0.62	<	0.67	Unsignalized
29	Sunderland	North Main St./Gunn Mountain Rd.	3	11	2.01	0.55	<	0.67	Unsignalized
30	Orange	South Main St./West Main St.	13	25	1.95	1.01	>	0.83	Signalized
31	Greenfield	Elm St./West St.	4	16	1.94	0.49	<	0.67	Unsignalized
32	Greenfield	Deerfield St./Cheapside St.	6	26	1.83	0.42	<	0.67	Unsignalized
33	Montague	Montague City Rd./Cabot Station Rd.	3	15	1.82	0.37	<	0.67	Unsignalized
34	Greenfield	Federal St./Maple St./Garfield St.	8	24	1.75	0.58	<	0.67	Unsignalized
35	New Salem	Route 202/Route 122	4	12	1.72	0.57	<	0.67	Unsignalized
36	Northfield	Route 10/Main St./Millers Falls Rd.	8	16	1.64	0.82	>	0.67	Unsignalized
37	Montague	Avenue A/Seventh St.	9	17	1.63	0.87	>	0.83	Signalized
38	Greenfield	Colrain Rd./College Dr.●	7	16	1.61	0.7	>	0.67	Unsignalized
39	Greenfield	Federal St./Silver St.	15	35	1.59	0.68	<	0.83	Signalized
40	Bernardston	Route 10/Turners Falls Rd.	3	15	1.57	0.31	<	0.67	Unsignalized
41	Northfield	Route 10/Parker Ave./Warwick Rd.	5	13	1.51	0.58	<	0.67	Unsignalized
42	Greenfield	Deerfield St./Meridian St.	7	19	1.48	0.54	<	0.83	Signalized
43	Deerfield	Route 116/Sugarloaf Street●	12	28	1.46	0.63	<	0.83	Signalized
44	Greenfield	Bank Row/Olive St.	4	12	1.36	0.45	<	0.67	Unsignalized
45	Deerfield	Route 116/North Hillside Rd.	4	12	1.35	0.45	<	0.67	Unsignalized
46	Montague	Unity St./Central St.	4	12	1.34	0.45	<	0.67	Unsignalized
47	Sunderland	Route 116/Route 47●	11	23	1.32	0.63	<	0.83	Signalized
48	Greenfield	Federal St./Sanderson St.	7	19	1.32	0.49	<	0.67	Unsignalized
49	Deerfield	Route 5&10&116/Elm St.	12	24	1.3	0.65	<	0.83	Signalized
T-50	Northfield	Route 10/Fort Sumner Turner Rd.	4	12	1.3	0.43	<	0.67	Unsignalized
T-50	Deerfield	Route 5/10/ Old Main St.	4	12	1.3	0.43	<	0.67	Unsignalized

It is important to recognize that Franklin County is very rural and the majority of its roadways carry lower traffic volumes than the rest of the state. Therefore, they experience a lower probability of crashes. Inclusion on the most hazardous intersection list for Franklin County does not necessarily mean that an intersection has a safety problem. To see how these intersections on the list compare to those intersections statewide, they have been compared to ratings produced by MassDOT, using the measure of crash rate per million entering vehicles (MEV_{CRASH}).

The MEV_{CRASH} rate is used by MassDOT to develop average rates for both signalized and unsignalized intersections on a regional and statewide level. These average MEV_{CRASH} rates are used by MassDOT as a threshold for determining if a particular intersection warrants a more detailed safety evaluation. The MEV_{CRASH} rate has been provided in Tables 13-3 and 13-4. A total of 26 of the identified 51 intersections have MEV_{CRASH} rates that exceed the MassDOT average crash rates. This includes the top nine intersections and 21 of the top 25 intersections. Based on this threshold, these intersections warrant a more detailed safety evaluation.

There are 26 signalized intersections in Franklin County, 11 of which appear in the top 50 most hazardous intersection list. Of these 11 signalized intersections, four have a MEV_{CRASH} rate higher than the MassDOT District average.

Road Safety Audits

The Road Safety Audit (RSA) process is a formal safety examination of an existing or future roadway or intersection by an independent, multidisciplinary team to identify potential safety issues and opportunities for safety improvements. Identified safety improvements can range from short-term, low-cost options to large scale redesign improvements. However, the majority of the improvements are focused on short and mid-term, low to mid-cost safety improvements that can elicit immediate results. The RSA process involves an audit team that typically includes representatives from State and Local agencies, such as State Transportation Officials and local Public Safety Officers.

The FRCOG, in conjunction with MassDOT and local municipalities, has performed several RSAs in Franklin County. To date, nineteen RSAs have been conducted in the communities of Deerfield, Erving, Greenfield, Shelburne, Sunderland, and Whately. The locations of these RSAs are:

- Route 2 (Mohawk Trail) / Colrain Road / Big Y Driveway, Greenfield
- Cheapside Street at Hope Street, Greenfield
- Turners Falls Road at Loomis Road, Greenfield

- Route 2 (Mohawk Trail) at Colrain Shelburne Road, Shelburne
- Route 116 (Bridge Street/Amherst Road) at Route 47 (North Main Street / South Main Street), Sunderland
- Route 2 (Mohawk Trail) at Route 2A (West Orange Road), Erving
- Route 5/10 at Cheapside Street, Greenfield
- Route 2A (Mohawk Trail) at River Street / Shelburne Road, Greenfield
- College Drive at Colrain Road, Greenfield
- Route 5/10 (Greenfield Road) at Route 116 (Conway Road), Deerfield
- Route 5/10 (Greenfield Road) at North Main Street, Deerfield
- Route 116 (Sunderland Road) at Sugarloaf Street, Deerfield
- Interstate 91 at Exit 25, Deerfield
- Conway Street at Devens Street, Greenfield
- Conway Street at Grove Street, Greenfield
- Conway Street Corridor (between Devens Street and Grove Street), Greenfield
- Wells Street at Allen Street, Greenfield
- Interstate 91 at Exit 24, Whately
- Route 5/10 at Christian Lane, Whately

Audit team members from the FRCOG, MassDOT, FHWA, and municipalities joined the RSA team leader, hired by MassDOT. For each location, the RSA team performed a review of background information such as traffic volumes, crash information, and operation concerns from local officials. After a review of background information was performed, the team visited each of the locations to analyze these issues. Each RSA concluded with the audit team developing an extensive list of challenges, issues, and potential solutions for the study area. Final recommendations were provided to audit team members by the consultant, upon completion of the report.

Safety Improvement Projects

The following section describes safety projects that are currently planned and/or designed for the region.

Intersection Improvements at Route 2A (Mohawk Trail) and Shelburne Road/River Street

The intersection of Route 2A (Mohawk Trail), Shelburne Road, and River Street) in Greenfield is a four-way signalized intersection with busy commercial driveways on two corners and an elementary school on a third corner. Listed as a MassDOT HSIP cluster for 2008-2010, 2009-2011, and 2010-2012, and appearing at #22 the Most Hazardous Intersections in Franklin County list, an RSA was conducted at this intersection in 2011. The RSA revealed

that that most prevalent crash type was rear-end crashes at the stop lines and the driveway cuts. MassDOT advertised a project to improve traffic signal equipment, phasing and timing, lane configuration, pedestrian accommodations and sight distance in 2014; construction is expected to be complete in 2015.

Intersection Improvements at Route 5/10 and Cheapside Street

Cheapside Street in Greenfield splits at the approach to Route 5/10, forming three unsignalized intersections with a large triangular island in the middle. The location was identified as a MassDOT HSIP cluster for 2008-2010, 2009-2011, and 2010-2012, and appears at #32 on the Most Hazardous Intersections in Franklin County list. An RSA conducted in 2011 recommended reconfiguring the Cheapside Street intersection to a single T-intersection or a roundabout. However, MassDOT analysis projected that traffic congestion and delay would be increased with a single T-intersection, so they instead proposed a lower cost reconfiguration of the existing intersections, with improved pavement markings, signage, and pedestrian accommodations, with the intent to study the future operations and consider a roundabout as a future improvement if necessary.

Route 2 East Safety Improvements

The Route 2 Task Force, formed in 1994, developed recommendations for the corridor, grouped into seven sections in which to concentrate the identification and implementation of specific safety improvements. They were: Athol/Phillipston, Orange, Erving Paper Mill Corner, Erving Center, Farley, Erving side and Gill/Greenfield. Since December 2006, many of the recommendations have been successfully implemented. The following is a summary of proposed projects to address the outstanding recommendations of the Task Force.



Relocated portion of Route 2 in Erving that was completed as part of the Route 2 East Safety Improvements.

Route 2 at Route 2A

The intersection of Route 2 (Mohawk Trail) and Route 2A (West Orange Road) in Erving was identified as a MassDOT HSIP cluster in 2009 and appears on the Most Hazardous

Intersections in Franklin County list at #28. An RSA conducted in 2013 revealed that safety issues at the intersection included sight distance, travel speeds, intersection geometry and signage. MassDOT is currently designing improvement to realign the intersection, providing new turn lanes and improved pavement markings and signage. The project is scheduled to be advertised in 2016; the design is at the 25% stage with a construction cost estimate of \$400,000.

Erving Center

Safety improvements in Erving Center will focus on traffic calming and safer turning movements. The improvements include improved roadway alignment, sight distance, pedestrian accommodations, and traffic calming measures. Additional public meetings will be held to review the design. The estimated cost of the project is approximately \$18 million at the 25% design stage.

Farley

Safety improvements in the Farley area of Erving focus on providing safer turning movements by redesigning several intersections, with improved sight distance and pedestrian accommodations. The design for the project will be reviewed at several public hearings. The project is in the preliminary design phase with a construction cost estimate of \$6.5 million.

Gill-Greenfield

Safety improvements in the Gill-Greenfield area will incorporate a protected turn lane (westbound) to access Barton Cove, and provide safer turning movements for the Route 2 businesses near the Avenue A/Route 2 intersection. A MassDOT project to construct these improvements is currently at the 25% design stage with a construction cost estimate of approximately \$2.5 million.

Route 2 West Safety Improvements

The multi-year Route 2 West Safety Study produced a number of recommendations to address safety issues along the 22-mile Route 2 corridor from the Greenfield Rotary west to the Charlemont/Savoy Town Line. Several of these have been implemented, including improvements at the Greenfield Rotary and the creation of a shoulder “climbing lane” westbound over Greenfield Mountain (discussed in Chapter 5). A number of recommendations have resulted in projects currently under design or development by MassDOT, including the following.

Roadway Reconstruction and Village Center Traffic Calming on Route 2, Charlemont
Currently at the 25% design stage, this project includes sidewalk reconstruction, crosswalk enhancement and gateway traffic calming treatments. The project is scheduled to be advertised in 2017, with a current cost estimate of \$5,750,000.

Intersection Improvements at Route 2 and Colrain-Shelburne Road

Identified as a MassDOT HSIP Cluster for 2008-2010, an RSA was conducted at this intersection in 2014. The intersection has limited sight distance due to its location on a hill near a curve. MassDOT has proposed a safety project to improve sight distance and intersection operation; the project is currently under design and expected to be advertised for construction in 2016. Additional recommendations from an RSA at the Big Y Plaza and Colrain Road will be reviewed to assess their feasibility with MassDOT.



Charlemont Village Center

Transportation Security

Transportation security is one of the eight planning factors required by MAP-21 to be considered by Metropolitan Planning Organizations during their planning processes. Franklin County has a robust and coordinated regional emergency preparedness effort that augments transportation safety and security concerns. This infrastructure, combined with exercises, trainings and real-world emergency response and recovery efforts in the region, contribute to planning efforts that include safety and security as cornerstones. This section provides a summary of the transportation security activities currently occurring within the Franklin County region.

Emergency Planning Activities

To date, emergency planning activities in Franklin County have focused on general emergency preparedness and training, and on the coordination between towns and agencies in response to a disaster. There has been a large emphasis on training, improving emergency communications infrastructure, and evacuation planning. Two major committees working on emergency planning in Franklin County are the Franklin County Regional

Emergency Planning Committee and the Western Regional Homeland Security Advisory Council.

Franklin County Regional Emergency Planning Committee

The Franklin County Regional Emergency Planning Committee (REPC) has conducted a number of training exercises in the last few years for dealing with chemical spills. In 2004, in the first such training exercise in more than a decade, the FRCOG and the REPC conducted a full-scale training exercise at the Buckland Trolley Museum Railyard in Shelburne Falls. The exercise provided an opportunity to practice chemical spill response through a scenario of a chemical leak caused by a car crash with a rail tank car on an active rail line. The exercise was attended by responding departments from surrounding towns, the regional district (District 4) Hazardous Materials Team, and rail employees.

Since the completion of the HMEP in 2006, mock chemical spill exercises have been carried out for four Franklin County communities as part of implementing the plan. These exercises were designed to test the regional preparedness for dealing with chemical releases and the coordination of different agencies in addressing such situations and in dealing with evacuations.

From 2010 on, the REPC has annually conducted tabletop exercises, primarily focused on scenarios involving the spilling of ethanol. The Massachusetts Department of Environmental Protection found that ethanol production and transport had increased, and was expected to continue to increase, leading to the REPC prioritization of ethanol response. The REPC participated in the development of a local Ethanol Response Plan, and tested that plan in 2014. In the past year, PanAm railways and the Federal Railroad Administration provided the REPC with a safety seminar to address the concerns related to increased rail traffic and speed as passenger rail re-entered the region.

These types of preparedness activities help create a regional response that is timely and well-coordinated. Franklin County has experienced hazardous material spills in the past. In 1999, a train derailed in Charlemont and dumped an estimated 6,000 gallons of liquid latex into the Deerfield River. In September 2006, a freight train headed to the East Deerfield Railyard derailed onto its side with 20 cars carrying feed grain and vegetable oil going off the tracks. Fortunately, none of the cars ruptured. The rapid response to this derailment demonstrated successful coordination between local, regional, and state officials.

Western Region Homeland Security Advisory Council

The Western Region Homeland Security Advisory Council (WRHSAC) was created in 2004 with the charge of improving the region's ability to respond to large-scale emergency incidents or disasters. The WRHSAC covers the 101 cities and towns in Franklin, Berkshire, Hampden, and Hampshire Counties, and is one of five similar councils in Massachusetts. Members are appointed by the Massachusetts Executive Office of Public Safety (EOPS). WRHSAC's voting members represent regional transit, fire services, law enforcement, emergency medical services, public works, corrections, public health, hospitals, emergency management, and public safety communications.

The WRHSAC works with the regional planning agencies in each region, and a variety of state agencies. The seven primary goals are:

- Improve interoperability and information sharing;
- Mass care and sheltering;
- Emergency response, recovery planning and preparedness;
- Chemical, biological, radiological, nuclear and explosive preparedness;
- Plan regionally to protect critical infrastructure and key assets;
- Train first responders and local officials; and
- Conduct multi-jurisdictional exercises for large-scale incident management.



Utility trucks repairing power lines after a damaging storm in Whately.

The FRCOG and the other regional planning agencies that are part of the WRHSAC (the Berkshire Regional Planning Commission and the Pioneer Valley Planning Commission) collaboratively built tools to strengthen the region's response to large-scale natural and man-made disasters. These tools include:

- A regional mutual aid agreement to facilitate the sharing of resources among towns;
- Information on priority critical infrastructure;
- Evacuation planning for special needs populations; and

- A resource guide that highlights caches of emergency supplies throughout the region that are available to communities to borrow as aids to response and recovery.

The WRHSAC coordinated the purchase and expansion of an information sharing system for police, fire, and sheriff's departments of Franklin, Hampden, Berkshire, and Hampshire Counties. Also, improvements were made to the interoperable emergency communication system for police, fire, and EMS, with upgrades in Franklin County completed in 2013. The new radio system is not yet coordinated with the radio system used by the Franklin Regional Transit Authority (FRTA) and this is an area where improved communication may be warranted.

Large-Scale Evacuations

Consideration of the transportation network in evacuation planning is essential and due to its rural nature, there are several challenges for large-scale evacuations in Franklin County. A map is contained at the end of the chapter which shows the main evacuation routes for the region. These routes have been identified by local communities through their emergency planning processes and the creation of their Comprehensive Emergency Management Plans (CEMPs) that all municipalities are required to develop.

The FRCOG worked with the Berkshire Regional Planning Commission (BRPC), Pioneer Valley Planning Commission (PVPC), and the University of Massachusetts Transportation Center (UMTC) to prepare preliminary evacuation plans for Western Massachusetts. The project developed evacuation maps that take into account conditions that would initiate evacuation flow out of the area, and conditions that might initiate evacuation flow into the region. The maps have been distributed to each municipality in the four counties of Western Massachusetts.

Flooding and Evacuations

Flooding is a major threat to the region's roadways; as evidenced by the damage from Tropical Storm Irene in 2011. Much of the transportation network in the hilltowns of Western Franklin County was extremely compromised by the storm – there were whole sections of towns that were inaccessible due to road closures. Following the event, the FRCOG mapped the storm damage and compared the flooding to the official 100-year flood plain. Many of the impacted roads did not appear to be located in the 100-year flood plain, which means that more of the transportation network was vulnerable to flooding than previously expected. To improve future evacuation efforts, the FRCOG then examined the existing official primary, secondary, and tertiary evacuation routes that are mapped for local emergency responders, and compared them with known or likely flooding events in order to determine if alternative

evacuation routes were necessary or even possible. Maps were then created for each town showing where flooding events may impact the official evacuation routes. These maps also show potential alternative evacuation routes that the towns could use in case of road closure on the existing official routes.

Multi- Hazard Mitigation Planning

Since 2005, the FRCOG has worked with twenty-five Franklin County towns to create and update local multi-hazard mitigation plans. As of June 2015, twenty-two Franklin County towns have FEMA-approved plans that make them eligible for state and federal grant monies to fund pre- and post-disaster mitigation projects to reduce the impact of future natural and man-made disasters. Local adoption of these plans followed an extensive public participation process that included the opportunity for key stakeholders to provide input.

The Federal Emergency Management Agency (FEMA) and the Massachusetts Emergency Management Agency (MEMA) define hazard mitigation as any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards such as flooding, snow and ice storms, high winds, hurricanes, wildfires, earthquakes, tornadoes, micro-bursts, ice jams, landslides, and wildfires; and from man-made hazards such as hazardous material spills. Mitigation efforts undertaken by communities can help to minimize damage to: infrastructure (such as roads, sewers, utility transmission lines, and water supplies); buildings; and natural, cultural, and historic resources.



**Conway Street in Shelburne Falls
following Tropical Storm Irene in 2011**

The most recent updates of the multi-hazard mitigation plans included:

- identifying the most important hazards that have a high probability of impacting each community based on historical data from national, state, and local sources;
- conducting a risk assessment to identify infrastructure and population groups at the highest risk for being damaged or injured by hazards;
- inventorying and assessing current Town hazard mitigation policies, programs, and regulations; and

- identifying and prioritizing mitigation actions in a five-year Action Plan to prevent future damage to property and loss of life.

In addition, the new plans review recent development trends and include updated maps showing critical facilities and infrastructure in each Town, such as schools, hospitals, shelters, police and fire stations, public water supplies, communication towers, dams, culverts, and areas of localized flooding (often from beaver dams). Other sections of the plans provide current information on the National Flood Insurance Program (NFIP) and potential funding sources for hazard mitigation plan implementation. Finally, the plans provide guidelines for monitoring, evaluating and updating the plan; recommendations for incorporating the plan into existing planning mechanisms; and suggestions for providing continued public involvement throughout the five-year implementation process.

Recommendations for Transportation Safety

- Support design and construction of Route 2 Safety improvements in Erving Center, Farley, and Gill/Greenfield.
- Work with MassDOT to implement safety improvements at commercial driveways along Route 2 West in Greenfield.
- Continue to be involved in the process related to the Strategic Highway Safety Plan.
- Continue to monitor high crash locations and work with MassDOT and Towns to develop recommendations to improve safety.
- Continue to conduct Road Safety Audits as necessary and appropriate and work with MassDOT and municipalities to implement safety recommendations.
- Investigate recent traffic fatalities in Franklin County for trends and opportunities for safety improvements.
- Investigate locations of serious injury bicycle and pedestrian crashes and make recommendations for improvements.

Recommendations for Transportation Security

- Continue working with the Franklin County Regional Emergency Planning Committee (REPC) and the Western Region Homeland Security Advisory Committee (WRHSAC) to expand the region's preparedness to manage emergency incidents, including those that impact the regional transportation network.
- Continue operability and management of the new radio communications system with assistance from the REPC and WRHSAC.
- Explore options for expanding the radio communication capabilities between emergency management personnel and the Franklin Regional Transit Authority.

- Assist employers and critical facilities with the creation of plans for continued operations and employee transportation in the event of an emergency in the region.
- Support regional and local planning efforts to mitigate natural hazards; and coordinate and integrate natural hazard mitigation activities as appropriate with emergency planning and operations.



Road Safety Audit (RSA) team members in the field.

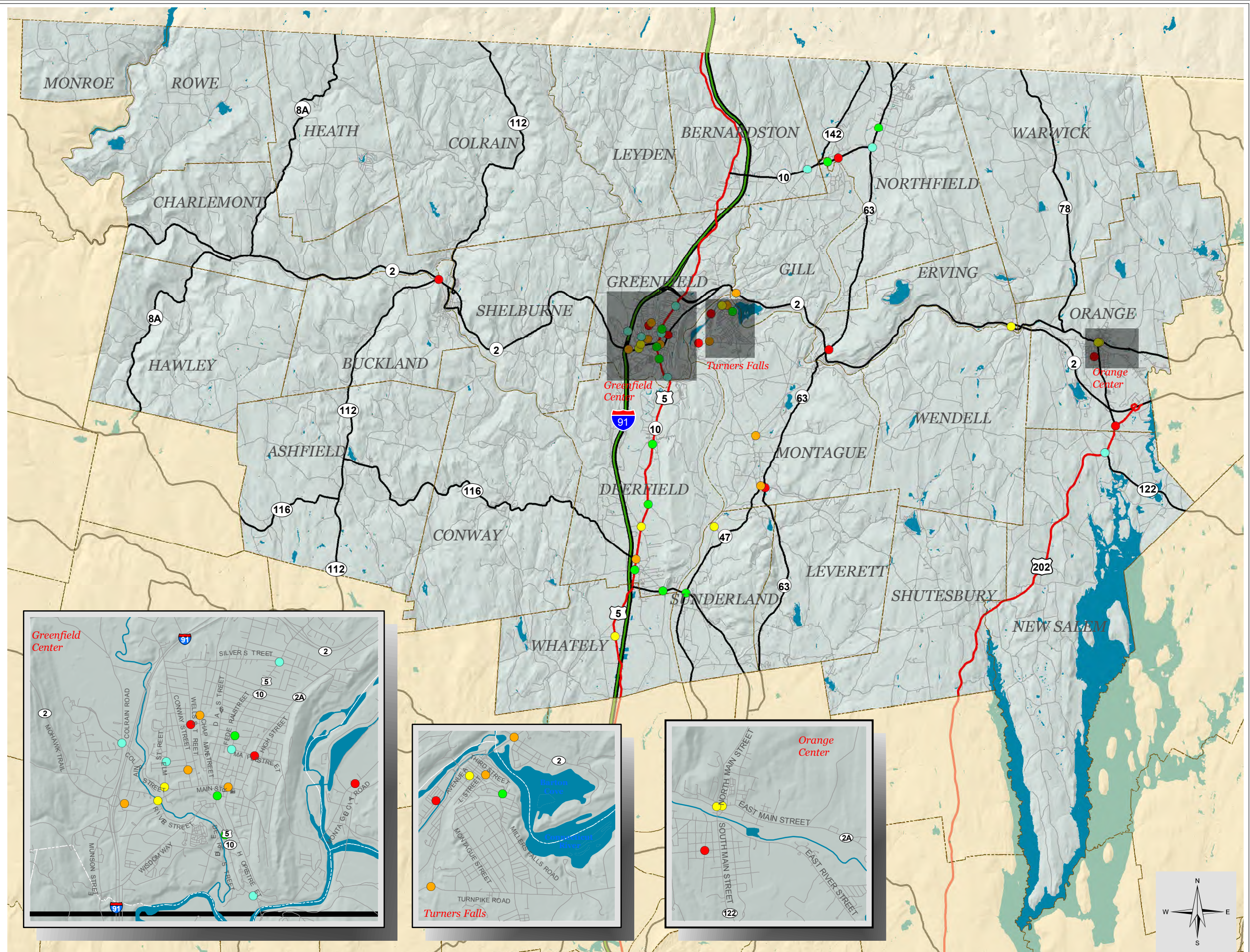
Top 50 Most Hazardous Intersections 2007 - 2009

- Rank = 1-10
- Rank = 11-20
- Rank = 21-30
- Rank = 31-40
- Rank = 40-50

0 1.25 2.5 5 Miles



Franklin Regional
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Critical Infrastructure & Evacuation Routes

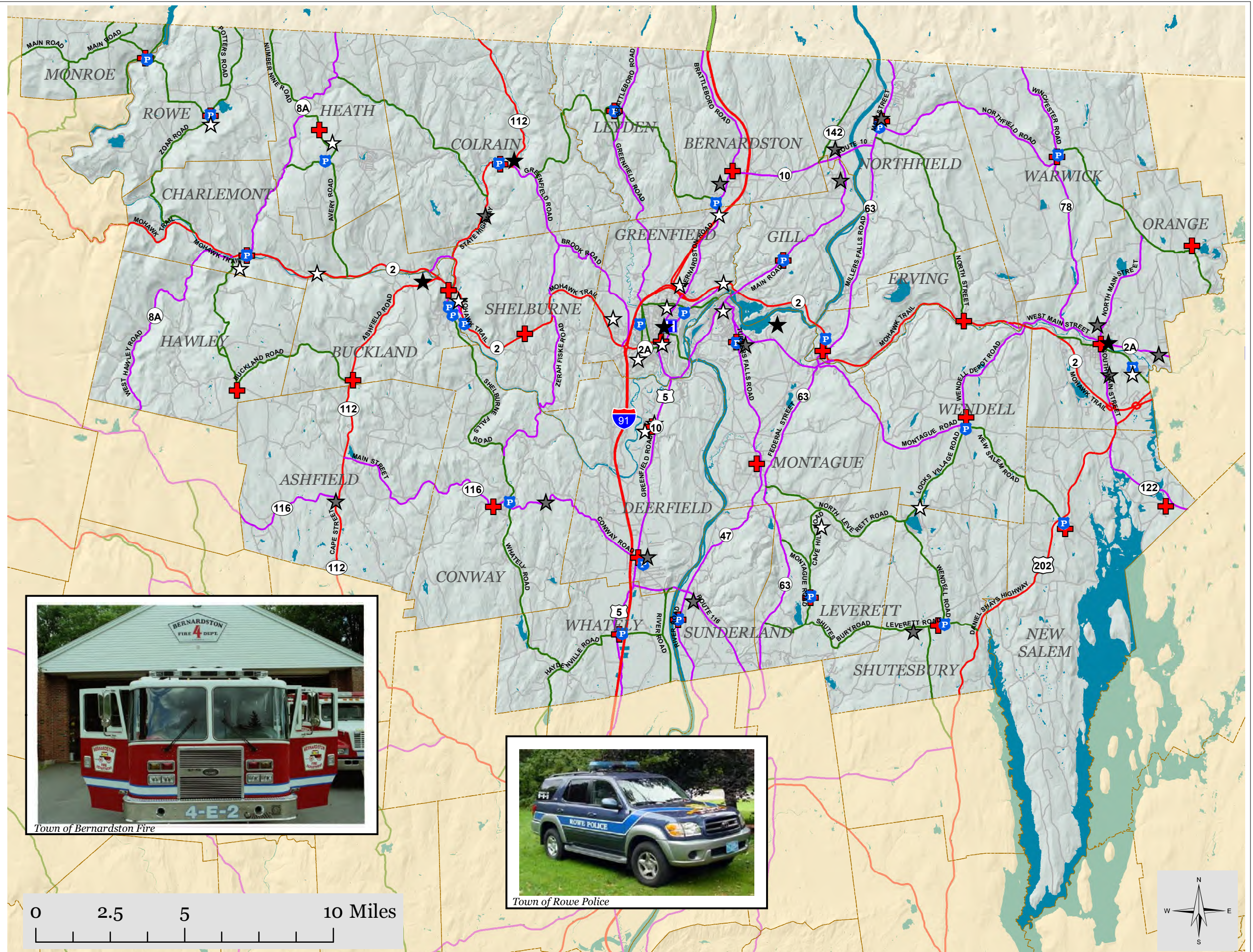
-  Police Department
-  Fire Department
-  Hospital

- ★ Primary
- ★ Secondary
- ☆ Terciary

— Main Route
— Secondary Route
— Terciary Route



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14

Air Quality Conformity Determination



2016 Regional Transportation Plan

14 Air Quality Conformity Determination

The 1990 Clean Air Act Amendments (CAAA) require Metropolitan Planning Organizations within ozone nonattainment areas to perform air quality conformity determinations prior to the approval of Regional Transportation Plans (RTPs) and Transportation Improvement Programs (TIPs). Conformity is a way to ensure that federal funding and approval goes to those transportation activities that are consistent with air quality goals. Since most all of Massachusetts (with limited exceptions) was designated on May 21, 2012 by the United States Environmental Protection Agency as “unclassifiable/attainment” for the latest ozone standard, a conformity determination for the Franklin Region Regional Transportation Plan is not required. Further details and background information are provided below:

A nonattainment area is one that the U.S. Environmental Protection Agency (EPA) has designated as not meeting certain air quality standards. A maintenance area is a nonattainment area that now meets the standards and has been re-designated as maintaining the standard. A conformity determination is a demonstration that plans, programs, and projects are consistent with the State Implementation Plan (SIP) for attaining the air quality standards. The CAAA requirement to perform a conformity determination ensures that federal approval and funding go to transportation activities that are consistent with air quality goals. The entire Commonwealth of Massachusetts was previously classified as nonattainment for ozone, and was divided into two nonattainment areas. The Eastern Massachusetts ozone nonattainment area included Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Plymouth, Suffolk, and Worcester counties. Berkshire, Franklin, Hampden, and Hampshire counties comprised the Western Massachusetts ozone nonattainment area. With these classifications, the 1990 Clean Air Act Amendments (CAAA) required the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), the two major precursors to ozone formation to achieve attainment of the ozone standard.

The 1970 Clean Air Act defined a one-hour national ambient air quality standard (NAAQS) for ground-level ozone. The 1990 CAAA further classified degrees of nonattainment of the one-hour standard based on the severity of the monitored levels of the pollutant. The entire commonwealth of Massachusetts was classified as being in serious nonattainment for the one-hour ozone standard, with a required attainment date of 1999. The attainment date was later

extended, first to 2003 and a second time to 2007.

In 1997, the EPA proposed a new, eight-hour ozone standard that replaced the one-hour standard, effective June 15, 2005. Scientific information had shown that ozone could affect human health at lower levels, and over longer exposure times than one hour. The new standard was challenged in court, and after a lengthy legal battle, the courts upheld it. It was finalized in June 2004. The eight-hour standard is 0.08 parts per million, averaged over eight hours and not to be exceeded more than once per year. Nonattainment areas were again further classified based on the severity of the eight-hour values. Massachusetts as a whole was classified as being in moderate nonattainment for the eight-hour standard, and was separated into two nonattainment areas—Eastern Massachusetts and Western Massachusetts. In March 2008, EPA published revisions to the eight-hour ozone NAAQS establishing a level of 0.075 ppm, (March 27, 2008; 73 FR 16483). In 2009, EPA announced it would reconsider this standard because it fell outside of the range recommended by the Clean Air Scientific Advisory Committee. However, EPA did not take final action on the reconsideration so the standard would remain at 0.075 ppm.

After reviewing data from Massachusetts monitoring stations, EPA sent a letter on December 16, 2011 proposing that only Dukes County would be designated as nonattainment for the new proposed 0.075 ozone standard. Massachusetts concurred with these findings.

On May 21, 2012, (77 FR 30088), the final rule was published in the Federal Register, defining the 2008 NAAQS at 0.075 ppm, the standard that was promulgated in March 2008. A second rule published on May 21, 2012 (77 FR 30160), revoked the 1997 ozone NAAQS to occur one year after the July 20, 2012 effective date of the 2008 NAAQS.

Also on May 21, 2012, the air quality designations areas for the 2008 NAAQS were published in the Federal Register. In this Federal Register, the only area in Massachusetts that was designated as nonattainment is Dukes County. All other Massachusetts counties were classified as unclassifiable/attainment.

Therefore, conformity for ozone in the Franklin TPO was required until July 20, 2013 for only the 1997 ozone standard. Since this Regional Transportation Plan will complete its collective development, review, and approval by the Federal Highway Administration after July 20, 2013 – when this standard was revoked, and since the latest area designations to do not require conformity under the current 2008 standard, the TPO does not need to perform a conformity

determination for ozone on the program.

15

Recommended Projects



2016 Regional Transportation Plan

15 Recommended Projects

As part of the development of the *Franklin Regional Transportation Plan*, regional needs and priorities for a 25 year horizon (from 2016 through 2040) were identified. Recommended projects were developed based on these identified needs and priorities. This chapter contains a summary of the recommended projects. These recommendations were identified during an extensive public participation process that included outreach, informational meetings and input sessions throughout Franklin County. In addition to the public input that was received, transportation staff conducted research and analyzed transportation-related regional data to identify transportation trends and needs. The findings and trends that shaped the recommended projects are summarized in the following paragraphs.

Overall, an interest in alternative transportation and more environmentally sensitive options was expressed strongly and frequently throughout the public participation process. The need for improved public transit in the region was the most frequently expressed comment during the public participation process. Many individuals expressed a desire to take public transit for economic (to save money) and/or environmental reasons (reduced emissions/better for the environment), but are unable to do so because of limited routes and/or schedules. The continued support and enthusiasm for bicycling in Franklin County for both transportation and recreational purposes was confirmed during the public input sessions. An interest in increased sustainability and the threat of climate change was also a frequent theme in the public's comments.

The safety of the roads in Franklin County was also a strong theme. The great strides that have been made to make the roads in Franklin County safer, particularly on Route 2 and Route 116, were acknowledged. However, the fact that there are additional improvements that could be evaluated and possibly implemented was recognized. Specific recommendations for additional safety evaluations are detailed in the plan and in this chapter.

The rural and scenic character of Franklin County remains an important consideration as road and bridge projects are planned and implemented. The scenic and natural resources of the area should be taken into consideration when improvements are designed so that they can be implemented in a context sensitive manner.

The many Scenic Byways that run through the area make Franklin County a special place and help bring tourism and economic development to the region. As a result, the needs of

tourists and the unique requirements of a scenic byway should be taken into consideration during any transportation project planning.

Regional demographic figures show that Franklin County's population is aging. Future transportation planning should take this into consideration. The transportation needs of senior citizens should be considered.

Additional high-speed broadband service that is currently being planned and implemented in the region will also have an impact on the county's transportation needs in the future. Improved internet access will allow more people to have the option of working from home. In addition, the arrival of broadband may attract new businesses and residents to Franklin County, which could increase the number of vehicles on the roads as people may choose to live in more remote parts of the region.

Recommended Projects

MAP-21 requires that all recommended projects with a total cost of \$20 million or greater, or that are regionally significant for air quality conformity purposes, be included in the Regional Transportation Plan. The Franklin County region does not have any projects of this magnitude recommended for the twenty-five year planning horizon. However, there are many projects that are a priority for the Franklin County transportation network.

The following is a listing of the twenty-five top transportation recommendations to be pursued through 2040. The recommended projects are not listed in a ranked, prioritized order, but instead represent the most important projects to the region. The projects are being listed to highlight their importance. The map at the end of the chapter shows the location of the recommendations.

Top 25 Transportation Recommendations for Franklin County

Safety Improvements

- Advance the planned Route 2 East Safety Improvements in Farley, Erving Center, and Gill/Greenfield.
- Implement safety and traffic flow improvements on Route 2 West in Greenfield near the commercial developments west of the Interstate 91/Route 2 rotary.

Major Highway Projects

- Rehabilitate the General Pierce Bridge in Greenfield/Montague.
- Reconstruct Conway Street, South Street, and Conway Road in Buckland.

- Resurface and repair North Main Street (Rt. 47) in Sunderland.
- Reconstruct North Main Street in Orange.
- Improve intersections at Main Road, Jacksonville Road, and Greenfield Road in Colrain.
- Resurface roadway and construct pedestrian accommodations on Routes 5/10 in Whately and Deerfield
- Reconstruct and improve drainage system on Haydenville Road in Whately.

Public Transit and Healthy Transportation Options

- Implement regional commuter passenger rail service between Greenfield and Springfield.
- Plan for east-west passenger rail service between Franklin County and Boston.
- Expand fixed bus service routes throughout the county, including to the North County towns of Bernardston and Northfield.
- Increase frequency and extend bus service hours during evenings and weekends to better serve the public.
- Create additional Park and Ride lots throughout the county.

Pedestrian and Bicycling

- Design and implement safety improvements for bicyclists/pedestrians on Turners Falls Road connecting Greenfield and Turners Falls.
- Design and implement safety improvements for bicyclists/pedestrians on Leyden Road in Greenfield.
- Remove the existing Schell Bridge over the Connecticut River in Northfield and replace with new pedestrian and bicycle bridge
- Implement Complete Streets recommendations on East Main Street (Route 2A) in Orange connecting the Town Center with Walmart and other commercial services.
- Construct a bikeway to connect the downtowns of Athol and Orange.
- Construct an Erving-Wendell Bike Path to connect Erving Center with Farley and Erving side without having to travel on Route 2.
- Construct a sidewalk to Mohawk Trail Regional High School and Middle School along Route 112 and North Street in Buckland.
- Advocate for bicycles to be permitted on the Amtrak Vermonter passenger train.
- Continue implementation of trailblazing signs along the Franklin County Bikeway.

Scenic Byways and Community Development

- Purchase conservation restrictions, agricultural preservation restrictions or land in fee from willing land owners to permanently protect important areas along the Scenic Byways.
- Create a parking garage near the Regional Transit Center to facilitate regional commuting and downtown revitalization efforts.

Complete List of Recommended Projects

The following is a table of projects categorized by the timeframe for implementation and the type of project (advocacy, planning/design, construction/implementation, monitoring or ongoing activities). The Estimated Total Cost reflects the cost of project construction/implementation.

RECOMMENDATIONS							
The abbreviations used in the table describe the actions to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, R – Recommendation for MassDOT to Prioritize, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Bernardston	Bridge Replacement: Brattleboro Road. (Projis Number 604189) (Bridge Number B-10-004)	P/D	R				\$2,658,630 (includes 4% inflation rate) (\$2,185,200 original estimate)
Bernardston and Greenfield	Interstate maintenance on I-91 (Projis No 607182)	P/D and C/I					\$2,293,920 (includes 4% inflation rate)
Buckland	Road Reconstruction and Minor Widening: Conway Street, South Street and Conway Road. (Projis Number 606463)	P/D	C/I				\$6,529,046 (includes 4% inflation rate) (\$5,160,000 original estimate)
Buckland	Bridge Replacement: Route 2 over Deerfield River (Projis Number 607674) (Bridge Number B-28-009)	P/D	R				\$26,301,967 (includes 4% inflation rate) (\$21,618,300 original estimate)
Buckland / Shelburne	Bridge Rehabilitation: Route 2A (Bridge Street) over Deerfield River (Projis Number 605882) (Bridge Number B-28-022, S-11-001)	P/D	R				\$1,228,819 (includes 4% inflation rate) (\$1,010,000 original estimate)
Buckland	Construct a sidewalk to Mohawk Trail Regional High School and Middle School along Route 112 and North Street.	P/D	C/I				\$1,107,154 (includes 4% inflation rate) \$875,000 (Original estimate)
Charlemont	Roadway reconstruction and Village Center traffic calming on Route 2 (Projis No 606507)	P/D and C/I					\$5,980,000 (includes 4% inflation rate)

RECOMMENDATIONS

The abbreviations used in the table describe the actions to be taken during the specified timeframe:
A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, R – Recommendation for
MassDOT to Prioritize, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Charlemont	Bridge Replacement: Zoar Road over Pelham Brook (Projis No. 605286; Bridge No. C-05-002).	P/D	R				\$3,122,912 (includes 4% inflation rate) (\$2,566,806 Original Estimate)
Charlemont	Bridge Replacement: Route 2 over Trout Brook (Projis No. 606158; Bridge No. C-05-020).	P/D	R				\$1,632,809 (includes 4% inflation rate) (\$1,342,050 original estimate)
Colrain	Bridge Replacements: Heath Road over the North River. (Projis No. 607584; Bridges Number C-18-020).	P/D	R				\$2,655,800 (includes 4% inflation rate)
Colrain	Intersection improvements on Main Road, Jacksonville Road, and Greenfield Road (Projis No 607538)	P/D and C/I					\$1,622,400 (includes 4% inflation rate)
Colrain	Resurfacing and related work on Route 112. (Projis No. 608165)	P/D	C/I				\$1,976,000 (includes 4% inflation rate) (\$1,900,000 original estimate)
Deerfield	Bridge Reconstruction: Route 116 over the Mill River. (Projis No 605732) (Bridge Number. D-06-030)	P/D	C/I				\$2,798,302 (includes 4% inflation rate) (\$2,300,000 original estimate)
Deerfield	Resurfacing on Route 5/10 from Hillside Road to Deerfield River (Projis No 607504)	P/D	C/I				\$2,038,897 (includes 4% inflation rate) (\$1,611,370 original estimate)
Deerfield	Bridge Preservation: McClelland Farm Road over railroad. (Projis Nor 602320) (Bridge Number. D-06-023)	P/D and C/I					\$6,477,190 (includes 4% inflation rate)

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Deerfield and Greenfield	Resurfacing on Route 5 and Montague City Road (Projis No 603876)	P/D	C/I				\$5,139,142 (includes 4% inflation rate) (\$4,224,000 original estimate)
Deerfield and Whately	Resurfacing on Route 5/10 from Old State Road to N. Hillside Road (Projis No 606011)	P/D and C/I					\$2,395,787 (includes 4% inflation rate)
Deerfield, Greenfield, and Whately	Interstate Maintenance on I-91 (Projis No 607478)	P/D and C/I					\$11,082,160 (includes 4% inflation rate)
Erving	Streetscape and Pedestrian Improvements on Route 63	P/D and C/I					\$450,000 (federal earmark)
Erving	Intersection improvements at Route 2 and 2A (Projis No 607246)	P/D and C/I					\$400,000 (includes 4% inflation rate)
Erving	Bridge Replacement: Church Street Bridge over Keyup Brook. (Projis Nor 603604) (Bridge Number. E-10-011)	P/D and R					\$2,130,195 (includes 4% inflation rate) (\$1,820,900 original estimate)
Erving	Design and Construction of Safety Improvements: Route 2 in Erving Center. (Projis Number 604818)	P/D	P/D	C/I			\$19,298,350
Erving	Design and Construction of Safety Improvements: Route 2 in Erving in Farley Safety. (Projis No. 604959)	P/D	P/D	C/I			\$6,692,300
Erving and Northfield	Road Reconstruction: Route 63. (Projis Number 601565)	P/D	P/D	C/I			\$4,597,586
Greenfield	Culvert repair under I-91 (Projis No 608120) (Bridge No G-12-039)	P/D	R				\$1,754,788 (includes 4% inflation) (\$1,500,000 original estimate)

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Greenfield	Interstate Maintenance on I-91 (5 miles total) (Projis No 607565)	P/D	R				\$9,822,039 (includes 4% inflation) (\$7,762,500 original estimate)
Greenfield	Structural steel girder painting on I-91 over Country Club Road (Projis No 606526) (Bridge No G-12-054, G-12-055)	P/D and R					\$2,901,951 (includes 4% inflation) (\$2,480,600 original estimate)
Greenfield	Superstructure replacement on I-91 over BMRR (Projis No 606548) (Bridge No G-12-052, G-12-053)	P/D	P/D	R			\$17,916,341 (includes 4% inflation) (\$14,725,926 original estimate)
Greenfield	Construct a Franklin Regional Transit Center Maintenance Facility	R					\$20,000,000
Gill and Greenfield	Improvements and upgrades on Route 2 from Adams Rd to French King Bridge (Projis No 605036)	P/D and R					\$3,118,148 (includes 4% inflation) (\$2,665,406 original estimate)
Greenfield and Montague	Bridge Rehabilitation: General Pierce Bridge on Montague Road over the Connecticut River. (Projis Number 601186) (Bridge Numbers G-12-020 and M-28-001).	P/D	R				\$22,316,344 (includes 4% inflation rate) (\$18,342,408 Original Estimate)
Heath	Bridge Replacement: SR8A (Jacksonville Street over Mill Brook) (Projis No 607671) (Bridge Number H-14-001).	P/D C/I					\$1,901,880 (includes 4% inflation rate)
Heath	Bridge Replacement: Sadoga Road over Burrington Brook. (Projis No 607118) (Bridge Number H-14-009).	P/D C/I					\$1,684,800 (includes 4% inflation rate)
Heath	Bridge Replacement: Jacksonville Street over West Brank Brook (Projis No 607678) (Bridge No H-14-007)	P/D	R				\$2,082,356 (includes 4% inflation) (\$1,711,545 original estimate)

RECOMMENDATIONS

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MassDOT to Prioritize, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Leverett	Resurfacing and drainage improvements on Route 63 (Projis No 606894)	P/D	P/D	C/I			\$727,558 (includes 4% inflation) (\$575,000 original estimate)
Leverett	Investigate possible improvements (to road alignment and/or sign locations) to improve safety and traffic flow at the intersection of Cushman Road and Shutesbury Road in Leverett.	P/D	P/D				
Monroe	Reconstruction and related work on Readsboro Road (Projis No 607325)	P/D	P/D	C/I			\$2,530,638 (includes 4% inflation rate) (\$2,000,000 original estimate)
New Salem and Shutesbury	Road Reconstruction: Route 202. (Projis Number 603820)	P/D	P/D	C/I			\$4,905,545 (\$4,032,000 original estimate)
Northfield	Bridge Replacement: Birnam Road over Mill Brook. (Projis Number 602319) (Bridge Number N-22-010)	P/D	R				\$3,130,733 (includes 4% inflation rate) (\$2,573,234 original estimate)
Northfield	Road Reconstruction: Route 63 (Main Street) and Route 10. (Projis Number 604820)	P/D	P/D	C/I			\$1,584,082 (includes 4% inflation rate) (\$1,302,000 original estimate)
Northfield	Bridge Removal: Schell Bridge over Conn. River & replacement with pedestrian bridge (Projis No 607588) (Bridge No N-22-002)	P/D and C/I					\$9,489,893 (includes 4% inflation rate) (\$8,436,480 original estimate)
Orange	Bridge Replacement: Holtshire Road over Millers River (Projis No 607527) (Bridge No O-03-009)	P/D and C/I					\$4,105,629 (includes 4% inflation rate)

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Orange	Bridge Replacement: Logan Road. (Projis number 603727) (Bridge Number O-03-001)	P/D	R				\$1,518,383 (includes 4% inflation rate) (\$1,248,000 original estimate)
Orange	Bridge Replacement: Brookside Road over Pan Am Railroad. (Projis number 604881) (Bridge Number O-03-015)	P/D and R					\$3,971,155 (includes 4% inflation rate) (\$3,264,000 original estimate)
Orange	Bridge Replacement: Route 2 over Route 202. (Projis number 606309) (Bridge Number O-03-021)	P/D and R					\$16,520,173 (includes 4% inflation rate) (\$13,578,378 original estimate)
Orange	Road Reconstruction: North Main Street. (Projis Number 603371)	P/D and C/I					\$4,831,725 (includes 4% inflation rate)
Shelburne	Bridge replacement on Bardwell Ferry Road over Dragon Brook (Projis No 607548) (Bridge No S-11-006)	P/D and C/I					\$2,466,464 (includes 4% inflation rate)
Shelburne	Intersection improvements on Route 2 and Colrain/Shelburne Road (Projis No 607539)	P/D and C/I					\$520,000 (includes 4% inflation rate)
Sunderland	Resurfacing on North Main Street (Route 47) from Route 116 to Claybook Drive (Projis No. 607245)	P/D	C/I				\$1,824,979 (includes 4% inflation rate) (\$1,500,000 original estimate)
Whately	Rehabilitation of Haydenville Road, from Conway Road to Williamsburg T.L. (Projis No. 605983)	P/D	P/D	C/I			\$2,189,975 (includes 4% inflation rate) (\$1,800,000 original estimate)
Whately	Superstructure replacement and substructure repairs SR 10 over I-91 (Projis No. 605354) (Bridge No. W-33-020)	P/D	R				\$5,839,934 (includes 4% inflation rate) (\$4,800,000 original estimate)

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Franklin County Towns along the I-91 Corridor	Plan for regional commuter rail service on the Knowledge Corridor Line.	P/D and C/I					
Region-wide	Continue to monitor the implementation of the recommendations of the Fitchburg Commuter Rail Service Expansion Study, particularly the recommendations that could most affect Franklin County commuters, including: the creation of a park and ride facility in Gardner and the extension of commuter rail service west of Fitchburg.	M	M	M	M	M	
Greater Greenfield and the Northern Tier Area of Franklin County	Promote the extension of east-west passenger rail service from Fitchburg to Greenfield.	A	A	A	A	A	
Erving and Wendell	Pursue funding to complete the design work for the Erving-Wendell Bike Path.	P/D	C/I				
Orange	Support the completion of the design of the Millers River Greenway to connect the Riverfront Park in Orange with the Alan Rich Environmental Park in Athol.	O	O	O	O	O	
Greenfield, Deerfield, Sunderland	Provide better and more frequent transit service between GCC and UMASS-Amherst.	A and P/D	A and P/D	A and P/D	A and P/D	A and P/D	
Region-wide	FRTA Fixed Route Vehicle Replacement	C/I					\$593,250

RECOMMENDATIONS

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Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Region-wide	FRTA Fixed Route Vehicle Replacement	C/I					\$197,750
Region-wide	FRTA Fixed Route Vehicle Replacement	C/I					\$395,500
Region-wide	FRTA Fixed Route Vehicle Replacement	C/I					\$593,250
Region-wide	FRTA Demand Response Vehicle Replacement	C/I					\$265,000
Region-wide	FRTA Demand Response Vehicle Replacement	C/I					\$318,000
Region-wide	FRTA Demand Response Vehicle Replacement	C/I					\$212,000
Region-wide	Work with the FRTA, PVTA, and the MART to advocate for the continued operation of and permanent funding for Route 32 and Route 31 and address additional needs for expanding these routes to include additional evening and weekend service.	A	A	A	A	A	
Region-wide	Pursue funding to expand FRTA routes to include additional daily runs and weekend hours.	O	O	O	O	O	
Region-wide	Install additional Franklin County Bikeway Logo signs, on the remaining segments of the Franklin County Bikeway network as outlined in the <i>Franklin County Bikeway Plan Update (2009)</i> .	C/I	O	O	O	O	\$200,000
Region-wide	Include pedestrian and bicycle infrastructure improvements when appropriate into the scope of road construction projects.	O	O	O	O	O	
Region-wide	Continue developing and implementing a Pavement Management System.	P/D	O	O	O	O	
Region-wide	Work with GreenDOT to promote more energy efficient and cleaner forms of transportation.	A	A	A		A	

RECOMMENDATIONS

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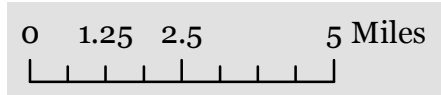
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	
Region-wide	Continue working with the Franklin County Regional Emergency Planning Committee (REPC) and the Western Region Homeland Security Advisory Committee (WRHSAC) to expand the region's preparedness to manage emergency incidents, including those which impact the regional transportation network.	O	O	O	O	O	
Region-wide	Coordinate the radio communication capabilities between emergency management personnel and the Franklin Regional Transit Authority.	O	O	O	O	O	
All Scenic Byways in Franklin County	Continue work to permanently protect scenic and agricultural lands along the scenic byways by purchasing conservation restrictions, agricultural preservation restrictions, and/or fee interest from willing landowners.	O	O	O	O	O	\$1,500,000
Connecticut River Scenic Farm Byway Area in Erving	Design and construct streetscape improvements on Route 63 in Erving. Projis No. 607253	P/D and C/I					\$450,000 Funded through FY2004 Section 115 Appropriation
Mohawk Trail Scenic Byway in Greenfield	Design improvements at the Upper Pioneer Valley Visitors Center in Greenfield.	P/D and C/I					\$500,000 Funded through FY2004 Section 115 Appropriation

Franklin County Massachusetts

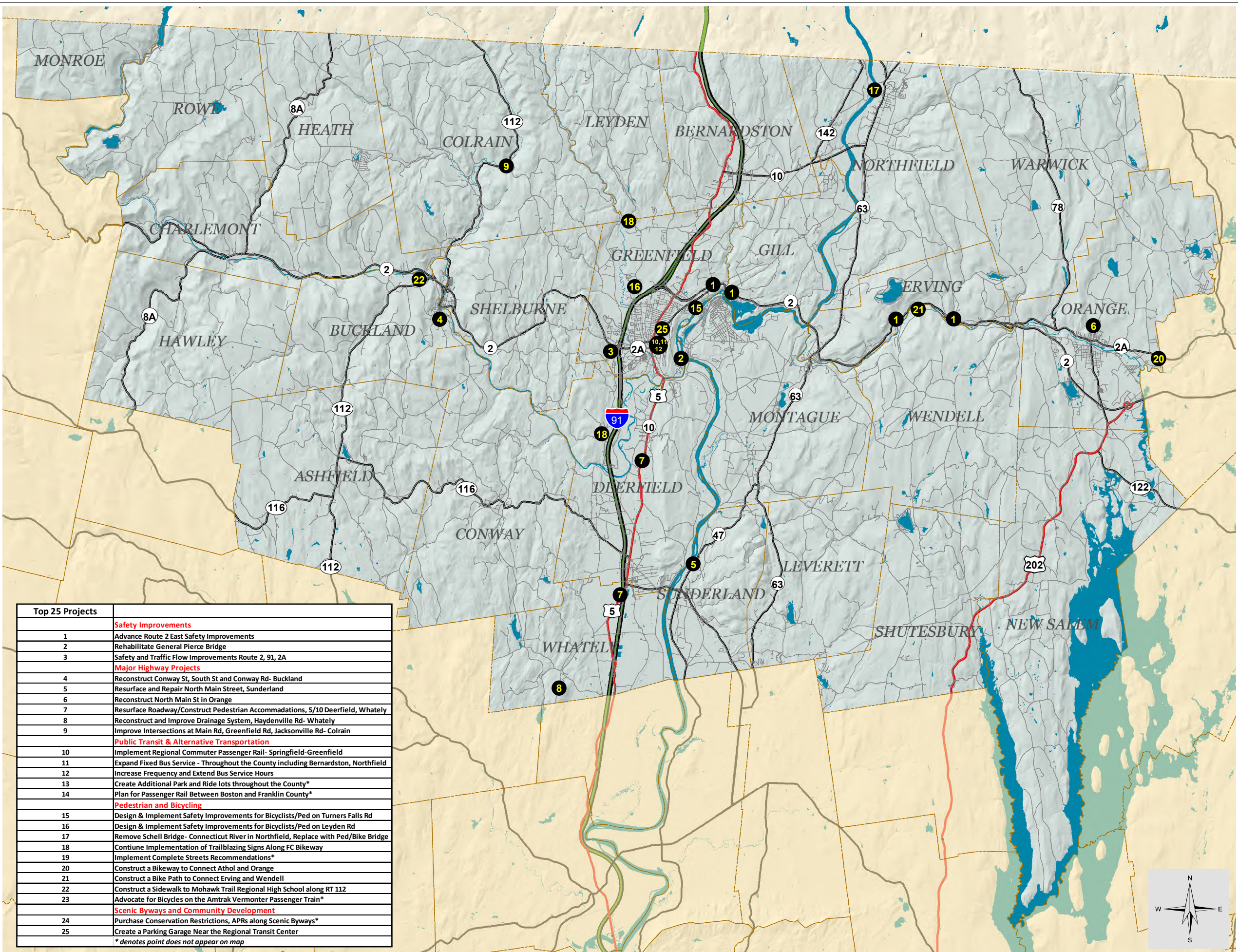
Top 25 Recommended Transportation Projects

*Project Area**

**See table below, not all projects
can be shown geographically*



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



16

Financial Constraint



2016 Regional Transportation Plan

16 Financial Constraints

It is important to provide a financial context to transportation planning so that projects can be prioritized based on the projected availability of future funding. This plan is financially constrained based on financial information provided by MassDOT for 2016 to 2040.

Funding Available

Funding Available for Highway and Bridge Projects

The Federal Highway Administration funds and State Highway and Bridge funds were projected statewide for five year timeframes for the following funding categories:

- Regional Discretionary Funding;
- Interstate Maintenance (IM);
- National Highway System (NHS)
- Statewide Bridge Projects;
- Statewide Infrastructure;
- Remaining Statewide Programs; and
- Non-Federal Aid Preservation.

Local aid funding sources such as Chapter 90 and the MassWorks Programs are not included in the MassDOT funding projections. The MassDOT projections were based on the assumption that funding levels would increase by a 4 percent annual inflation rate after the year 2016.

Based on these funding projects, a total of \$794,241,050 is anticipated to be available to Franklin County for highway-related transportation improvements between 2016 and 2040. The forecasted funding levels for the Franklin Region were based on the projected amount available to Metropolitan Planning Organizations statewide, and the following factors:

- **Funds for Regional Discretionary:** Projected regional funding for Regional Discretionary projects are based on the regional share formula for the Statewide Highway Funds developed by the Massachusetts Association of Regional Planning Agencies (MARPA). Under the MARPA formula, the Franklin Region is allotted 2.54% of the statewide funds distributed to the regions.
- **Funds for Bridges:** Projected regional funding for bridge improvements and repairs is based on each region's percentage of federal-aid eligible bridges. The Franklin Region's percentage is 6.83%.

- **Funds for Interstate Maintenance:** Projected regional funding for interstate maintenance projects is based on the regional share of Interstate lane mileage, excluding the Massachusetts Turnpike. The Franklin Region's percentage is 3.78%.

Funding Available for Transit Projects

As with highway and bridge funding, the estimated costs of transit recommendations and projected revenue also needs to be reviewed to ensure financial constraint. Estimates of available transit funding were provided by the MassDOT Rail and Transit Division. Federal funds must be used for capital projects. Capital funds may only be spent on tangible items such as equipment, preventative maintenance of vehicles, facilities and equipment, ADA services, facility improvements and the purchase of vehicles. Operating expenses must come from grants, state and local funding and farebox revenue. Operating expenses cover salaries, benefits, advertising and marketing expenses and other cash needs. A summary of the projected transit funding for the Franklin Regional Transit Authority from 2016 to 2040 is in Table 16-2 at the end of this chapter.

The transit funds were projected on a statewide basis by MassDOT Rail and Transit Division, and are broken down in this Plan by the same five time periods as the highway and bridge funds, into the following federal funding categories:

- Urbanized Area Formula Funding (5307 Program);
- Non-Urbanized Area Formula Funding (5311 Program);
- State of Good Repair Grants (5337 Program); and
- Bus and Bus Facilities Funding (5539 Program).

A total of \$34,880,520 is anticipated to be available to Franklin County for transit-related transportation projects between 2016 and 2040. Projects formerly funded under JARC, a SAFETEA-LU program, are now eligible activities under Section 5311. The forecasted funding levels assume a 1.5% annual inflationary increase beyond the year 2016.

For funding under the 5310 Program, regional funding estimates were based on the past distribution of Mobility Assistance Program (MAP). Using this approach, the Franklin Region receives 5.73% of the statewide 5310 Program funds. This approach was agreed to by the MassDOT Rail and Transit Division and the Massachusetts Association of Regional Transit Agencies (MARTA), and varies from a previous approach that based each region's funding on its percentage of the statewide elderly and disabled population. The projected State Capital Investment and State Assistance for Operations funds for each region were estimated based on current funding levels for these programs.

Project Cost Estimates

Cost estimates are included for construction/implementation related projects. Cost estimates were gathered from a variety of sources including the Franklin Regional Transit Authority, FRCOG, towns' Departments of Public Works, and MassDOT. Costs for projects that are expected to extend beyond 2016 include an inflation factor of 4% per year.

Financially Constrained Plan

For financial planning purposes, Regional Transportation Plans are required to show that there is sufficient funding projected to be available to cover the costs of major projects (those projects that are estimated to cost greater than \$20 million). The Franklin Region has only two future recommended projects that are estimated to exceed \$20 million and each of these are bridge projects, which is funded by the Statewide Bridge Program. MassDOT has estimated that between 2016 and 2040 there is \$301,955,482 available for bridge projects for the Franklin Region. Over the same time frame, the Franklin Regional Transportation Plan recommends that MassDOT prioritize \$48,618,311 in major bridge projects. Because this amount does not exceed the projected available funds, this Plan is financially constrained.

Tables 16-1 and 16-3 show the available highway and transit funding for the Franklin Region between 2016 and 2040. Table 16-2 shows that there is sufficient funding for the five-year timeframes and for the 2016 - 2040 period overall should MassDOT prioritize the recommended bridge projects for repair.

Table 16-1: Estimated Regional Transportation Plan Highway Funding for 2016-2040						
Funding	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	Total
Total Funding Available for Programming in the Franklin Region RTP	\$130,307,571	\$130,686,091	\$160,279,208	\$179,948,074	\$193,020,106	\$794,241,050
Regional Discretionary Funding	\$26,104,941	\$27,477,455	\$34,335,940	\$38,879,486	\$41,884,248	\$168,682,070
Interstate Maintenance Projects	\$13,304,221	\$12,591,809	\$15,734,776	\$17,816,899	\$19,193,861	\$78,641,565
National Highway System Projects	\$4,530,507	\$4,387,742	\$5,482,940	\$6,208,477	\$6,688,293	\$27,297,960
Statewide Bridge Projects	\$50,114,059	\$48,534,863	\$60,649,636	\$68,674,864	\$73,982,333	\$301,955,482
Statewide Infrastructure Projects	\$991,301	\$960,063	\$1,199,698	\$1,358,450	\$1,463,436	\$5,972,948
Remaining Statewide Programs	\$31,625,375	\$33,420,997	\$41,763,015	\$47,289,357	\$50,944,068	\$205,042,813
Non-Federal Aid Preservation Projects	\$12,698,500	\$12,888,978	\$13,079,455	\$13,269,933	\$13,460,410	\$65,397,275

Table 16-2 Bridges

Costs	Amount of Funding per Timeframe					
	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	Total
Current Estimate	\$22,316,344	\$26,301,967	\$0	\$0	\$0	\$48,618,311
Funds Available	\$50,114,059	\$48,534,863	\$60,649,636	\$68,674,864	\$73,982,333	\$301,955,482
Reserve	\$27,797,715	\$22,232,896	\$60,649,636	\$68,674,864	\$73,982,333	\$253,337,171

Table 16-3: Estimated Massachusetts Transit Program Funding Forecasts 2016-2040						
Timeframe	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	Total
Total Funding Available for Programming in the Franklin Region RTP	\$6,895,036	\$6,235,546	\$6,717,454	\$7,236,605	\$7,795,879	\$34,880,520
Section 5307	----	----	----	----	----	----
Section 5311	\$6,895,036	\$6,235,546	\$6,717,454	\$7,236,605	\$7,795,879	\$34,880,520
Section 5337	----	----	----	----	----	----
Section 5339	----	----	----	----	----	----

Appendices



2016 Regional Transportation Plan

Appendix A Public Outreach Efforts

The following is a list of stakeholders that were contacted as part of the public outreach effort in the development of this Regional Transportation Plan.

- All twenty-six Franklin County Town Administrators
- All twenty-six Franklin County Select Boards
- All twenty-six Franklin County Planning Boards
- All twenty-six Franklin County Highway Superintendents
- Greater Franklin County Comprehensive Economic Development Strategy Committee
- Franklin Regional Planning Board
- Franklin Regional Transit Authority
- Greening Greenfield
- Community Action, Inc.
- Franklin County Home Care Corporation
- Franklin County Regional Coordinating Council
- Franklin Land Trust
- Mt. Grace Land Conservation Trust
- Connecticut River Watershed Council
- Baystate Franklin Medical Center
- Franklin County North Quabbin Community Coalition
- Windham Regional Commission (VT)
- Southwest Region Planning Commission (NH)
- New England Central Railroad
- WTE, Ed Wrisley
- All twenty-six Franklin County Council on Aging
- Franklin County Regional Housing Redevelopment Authority
- Massachusetts Rehabilitation Commission
- Stavros
- F.M. Kuzmeskus
- Franklin County Bikeway Committee
- Greenfield Planning Department
- Montague Planning Department
- YMCA
- Greenfield Community College
- Franklin County Energy Committees
- Congressman McGovern
- State Senator Stanley Rosenberg
- State Senator Benjamin Downing
- State Representative Stephen Kulik
- State Representative Paul Mark
- MassDOT Districts 1 and 2
- Franklin County Transportation Planning Organization members
- Massachusetts Department of Conservation and Recreation
- Massachusetts Department of Housing and Community Development
- Massachusetts Department of Environmental Protection

- Massachusetts Executive Office of Energy and Environmental Affairs
- Massachusetts Department of Agriculture
- Massachusetts Historical Commission
- Federal Highway Administration

Summary of Public Input Received for 2015 RTP

The following summary was collected from many public events, they include: Parking Day, 3 public forums, and several stakeholder meetings that FRCOG staff attended. A survey was also distributed and the results are attached here – 52 surveys to date have been collected.

Transit

- Transportation for students included as part of transit trips
- Senior transit needs to be a priority
- There needs to be increased collaboration between FRTA, PVTA, and UMass (this was mentioned multiple times)
- Wendell is interested in bus service. There could be a New Salem-Wendell-Shutesbury-Montague loop. There is a lot of residents in these communities are environmental and energy conscious and would be bus-friendly.
- Need more subsidized funding for transit
- More north-south access to Amherst
- Need weekend bus service
- Need evening service
- There needs to be an organized/structured way of increasing bus ridership (marketing)
- Snow clearing on sidewalks and curb cuts is a huge issue in winter. Major ADA issue.
- The FCHCC would like to expand transit service
- Need more routes and increased frequency
- Need more accessible features
- Need improved bus shelters
- Suzie Hale, Greenfield High School Transition Coordinator:
- More access to Amherst
- Could the bus that stops at GHS come earlier in the afternoon? School is dismissed at 2:10pm, so if bus is running late, students can miss their bus home.

- Transit is HUGE issue for low income households. They need to get to their jobs in order to keep assistance.
- Is transit possible over state lines? Connect Greenfield with Brattleboro and Keene.
- Recommendation – get shift changes of big companies to see how to coordinate transit routes. Judd Wire is interested in getting transit service (near future potential industrial site).
- Need more routes in West County
- GCC bus only route
- Saturday bus service to Orange
- Make the bus schedule more visual in places like downtown and easier to use

Roadway/Bridges

- There are a lot of local bridges that were mostly replaced after 1938 storm. They are past their lifetimes and need to be replaced. Colrain has 46 of these bridges. How will these repairs be paid for?! A closed bridge is an emergency issue due to very long detours (can be 20+miles). Local bridges need to be a priority.
- Funding for bridges will be incredibly important
- Colrain-Heath bridge is out resulting in huge detours down a single narrow lane road, which is very steep and especially dangerous in winter.
- Issues with Gill-Montague Bridge
 - Way too many lights. Is there a waiver process for lighting standards?
 - Sidewalks are not shoveled and cleared in winter
 - The grates on the roadway are perpendicular to roadway, is unsafe for bicyclists
- The General Pierce Bridge needs to be improved

Sustainability/Livability

- Does model Complete Streets policies mention winter clearing policies for sidewalks?
- Ridesharing could be a cheap way to get transportation for low income households.
- Can we connect MassRIDES with temp agencies to work on increasing ridesharing
- There is interest in car-sharing (Zip Car), but difficult to attract companies to rural areas. Could an aggregation model be sued to attract these services
- Improve infrastructure to support electric vehicles. Recommendation to create a map of tri-state EV charging stations – where are there gaps
- More electric plug in sites

Economic Development

- The potential Olympics is an opportunity for transit and economic development here
- Focus on economic development – help current residents in town rather than long term rail projects
- Still need to work on internet/broadband issues
- There needs to be a consideration of development pressures and reexamination of build-out studies. Look at RPSD's target growth areas.
- Easier to do transportation planning (particularly for transit) if towns commit to village center densities
- Cost of parking in Greenfield is a barrier to transit and jobs. Too expensive to park at JWO for low income to use the bus.
- Parking in Greenfield too expensive – don't want to shop there anymore (4 comments on this)

Safety

- Rt. 47/63 intersection has a sightline safety issue (need to lower the profile)
- General safety – fog lines should be bright and clear.
- Improved safety on Turners Falls Road

Bicycle/Pedestrian

- GCC roundabout does not include improvements for bicyclists (granite curbs are not bike friendly)
- Walking along rural roads is difficult, not because of lack of sidewalks, but because of presence of poison ivy and knotweed. Warwick was told that they would need a Vegetation Management Plan in order to spray or treat weeds. But creating these plans is too difficult for a small town to do.
 - Knotweed and other invasives are affecting safety sightlines (ex. Wendell/Leverett (North Leverett Rd).
- Sunderland would like on-road bike lanes to connect communities and cross county lines
- Greenfield Main Street should be restriped to make bike friendly – get rid of angle parking.
- Improved ped/bike connections between Turners Falls and Greenfield
- Improved safety on Turners Falls Road! (bike lane possible?)
- More bike paths everywhere, but especially connecting Unity Park to downtown Greenfield
- More bicycle-friendly roadways

Passenger Rail

- Continue advocating for Greenfield to Boston route (not settling for Boston to Springfield route) and include stop in Amherst.
- Need to publish information on Amtrak train schedules and ticket purchasing
- There are a large number of employees (esp. non-profit) in FC that have to commute to Boston for work on weekly/monthly basis. This is very expensive – is there a way to commute cheaper? Rail, telecommute options? Get # of employees in FC that commute like this to make case for commuter rail.
- There needs to be improved long term parking for Amtrak. Better marked, easier to understand and use.
- Greenfield has been told they can get directional signs for Amtrak station. They need to do so and install them.

Results from Votes at Meetings

Vote 1: If you had to decide an overall strategy for improving transportation in Franklin County, how would you rank the following items?

- 1) Make communities more walkable and bike friendly
- 2) Improve or expand public transportation
- 3) Protect the environment*
- 3) Expand rail service *
- 4) Reduce crashes
- 5) Build new or repair roadways

*There are 2 items tied for #3 in priority

Vote 2: Rate your satisfaction with the following items. (numbers shown are the total count from participants)

	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	No Opinion
Safety of roadways		3	1		
Maintenance of condition of roadways		4			
Availability and/or frequency of public transit			1	4	
Safety of walking in community		3	1		
Safety of bicycling in community		2	2		
Awareness of alternatives to driving alone	1	1	2	1	

Results from Parking Day Voting regarding the ranking of regional transportation priorities:

- 1) Walking (48 votes)
- 2) Bicycling (42 votes)
- 3) Passenger rail (40)
- 4) Transit (27)
- 5) Safety (22)
- 6) Roads (9)
- 7) Bridges (7)
- 8) Tourism (7)

Appendix B Public Comments

Once the FRCOG staff had completed a draft of the 2015 Regional Transportation Plan, public input was sought from a variety of stakeholders, as well as those required by MAP-21, during a 30-day public review and comment period between June 25, 2015 and July 24, 2015. Two public meetings were held on July 15, 2015 – one at 11:30 AM and the second at 5:30 PM – to directly obtain public input regarding the draft RTP. Both meetings were held at the centralized and accessible location of the John W. Olver Transit Center in Greenfield.

As part of this outreach, the FRCOG received comments on the draft RTP. Those comments that were received were reviewed and incorporated, as appropriate, into the RTP. The following are the comments received during the public comment period.

Comments Received during the Final Public Meetings

- The Town of Greenfield needs to commit to an overnight parking plan for passenger rail users and clearly advertise it.
- The fixed transit route Rt. 23 is not viable as it stands now. The \$3 fare is too expensive and is a hindrance to ridership. This route should be a priority.
- Two existing bus riders would strongly support Saturday service.
- How does the quality of roadway pavement get determined during construction projects? The quality can greatly affect bicyclists.
- There needs to be a focus on making Route 5/10 safer for bicyclists. Related to this, there should be an off-road bike link in north Deerfield connecting to Historic Deerfield.
- There should be a regional policy or push for clearing snow from sidewalks and curb cuts.

Comments Received during the Public Comment Period

From: Walter Ramsey - Montague Planner [<mailto:planner@montague-ma.gov>]

Sent: Monday, June 29, 2015 1:04 PM

To: Megan Rhodes

Subject: Draft Transportation Plan- Comments

Hello Megan,

Good job with the plan. Here are my comments:

Montague City Rd Complete Streets Project is now scheduled for construction in 2016 (not 2015). Bid opening is Sep 2015

Hatchery Rd/ Greenfield Rd ped bridge is now scheduled for construction in 2016 (not 2015). Bids were opened 6/9

It would be ideal if the regional plan could reflect some of the recommended projects in the 2013 Downtown Turners Falls Livability Plan that I am working on. Any mention helps me with grants and building support.

Livability Plan Recommendations:

5th street gateway improvements. A primary entrance into Turners Falls from Greenfield via the White Bridge is a complicated intersection bisected by the Canalside Trail .The intersection also accommodates pedestrian flow from Paperlogic employees. The Livability Plan developed a concept intersection improvement. The next step would be a complete streets analysis. Located within a Slum and Blight Designation Area.

Public parking on Canal and 3rd Street. The Town plans to develop a 30 space public parking lot a former Brownfield site at the corners of 3rd and Canal Street. Located within a Slum and Blight Designation Area. Will alleviate demand generated by new economic and residential activity on 3rd Street and will support future reuse of the historic mill district. Town has completed a conceptual design for the municipally-owned site. Likely funding source is CDBG

Rehabilitate Avenue A Streetscape. The Town is currently undergoing a \$396,000 phase I streetscape improvement recommended in the Livability Plan (construction to begin in July). This phase includes replacing pedestrian streetlights on Avenue A and developing a landscaped pedestrian micro plaza in the center of downtown. The plaza will make ped crossing safer, accommodate bike parking, and accommodate ADA accessibility. Funded by CDBG. Future phases include extending pedestrian streetlights from 5th Street to 7th Street and repairing planter boxes installed in the 1980's. Additionally, The Town is working with FRTA to make bus stop improvements for the downtown stops.

Happy to provide further info about these transportation related projects.

Walter Ramsey, AICP
Town Planner and Conservation Agent
Town of Montague
One Avenue A Turners Falls, MA 01376
413.863.3200 ext.112

From: jeff singleton singleton.jeff47@gmail.com
To: Maureen Mullaney <MMullaney@frcog.org>; Megan Rhodes MRhodes@frcog.org
Subject: Energy Committee Statement

Hi Maureen and Megan:

The Montague Energy Committee discussed both the FRCOG regional transportation plan and the FRTA Comprehensive service analysis. Obviously there was a lot to discuss and - given the fact that there were a number of other important items on the agenda - we could unfortunately only touch on some of the key issues that have been of on-going concern to the MEC and Montague.

One of these obviously is the status of Route 23. The committee endorsed both the FRCOG and FRTA-CSA proposal related to "the expansion of Route 23 and highly recommends that a viable route to UMass Amherst, the largest employer in the region, be made a key regional transportation goal." The resolution also said that "We would like to see more emphasis on increasing public transportation use by those with automobiles who seek to reduce dependence on fossil fuels."

As I said both of these points are consistent with positions the MEC and the Montague Selectboard have taken over the past year. See attached.

Thanks. In general the FRCOG plan looks very comprehensive, both practical and visionary which is an impressive mix. I hope the focus on these concerns is not seen as taking away from that.

All the Massachusetts MPOs and MassDOT continue to meet the requirements of air quality conformity according to the Code of Federal Regulations, and as evaluated through inter-agency consultation. Specifically:

On March 6, 2015, (80 FR 12264, effective April 6, 2015) EPA published the Final Rulemaking, “Implementation of the 2008 National Ambient Air Quality Standards (NAAQS) for Ozone: State Implementation Plan Requirements; Final Rule.” This rulemaking removed transportation conformity to the 1997 Ozone NAAQS (the standard referenced by CLF and the subject of a 12/23/14 DC Circuit Court decision).

Link to Final EPA Rulemaking: <http://www.gpo.gov/fdsys/pkg/FR-2015-03-06/pdf/2015-04012.pdf>

Since the RTPs have been developed, reviewed, and will be approved after April 6, 2015, air quality conformity determinations to the 1997 Ozone NAAQS are no longer required, as those standards and all associated area designations have been permanently replaced by the 2008 NAAQS, which (with actually a stricter level of allowable ozone concentration than the 1997 standards) no longer designate Massachusetts as a non-attainment area(s) for ozone (except for Dukes County – see below).

Through the Interagency air quality consultation process (involving U.S. DOT, EPA, MassDEP, MassDOT, and the MPOs) the latest EPA rulemakings, the referenced court decision, ozone standards and area designations were all reviewed. Specific transportation conformity requirements in Massachusetts for this RTP round are as follows:

- No conformity determination is required for the 2008 Ozone NAAQS, as Dukes County (the only designated non-attainment area) is classified as an “isolated rural nonattainment area” and therefore only needs to evaluate transportation conformity when the Martha Vineyard Commission has a “regionally significant” project that would trigger conformity.
- The Boston carbon monoxide attainment area with a current maintenance plan in place (with a carbon monoxide motor vehicle emission budget) will prepare a carbon monoxide air quality analysis for the Boston Area (nine communities).
- The Lowell, Waltham, Worcester and Springfield Areas are classified attainment with a limited maintenance plan in place. No regional air quality analysis is required in limited maintenance plan areas as emissions may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that such areas will experience so much growth in that period that a violation of the carbon monoxide NAAQS would result. Therefore, in areas with approved limited maintenance plans, Federal actions requiring conformity determinations under the transportation conformity rule are considered to satisfy the “budget test.” All other transportation conformity requirements under 40 CFR 93.109(b) continue to apply in limited maintenance areas, including project level conformity determinations based on carbon monoxide hot spot analyses under 40 CFR 93.116.

In consideration of the comments received, combined with MassDOT's greenhouse gas (GHG) reporting requirements for the Commonwealth's Global Warming Solutions Act (310 CMR 60.05), MassDOT will conduct a "conformity-related" emissions analysis for ozone precursors, consistent with the 1997 NAAQS standards (currently superseded by the 2008 NAAQS). This emissions analysis will be for informational purposes only (as it is currently NOT federally required), and will be contained in a separate air quality document (also to include GHG emissions analysis) that will be completed at the end of August 2015 – the results of which will then be available to the MPOs, the Massachusetts Executive Office of Energy and Environmental Affairs (and affiliate agencies), and all other interested parties.



Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO



July 22, 2015

Linda Dunlavy, Executive Director
Franklin Regional Council of Governments
12 Olive Street Suite 2
Greenfield, MA 01301

Dear Ms. Dunlavy:

The Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning (OTP) has reviewed the draft 2016 Regional Transportation Plan (RTP) released by the Franklin Transportation Planning Organization (TPO) on June 23, 2015. The Franklin Regional Council of Governments staff is commended for providing a concise and thorough document with data supporting a clear vision for long term infrastructure investments and improvements throughout the region.

The following MassDOT comments include both general guidance and specific comments on the MPO's 3C planning process with regard to the content of this document as released for public review.

- Overall
 - Please ensure that the document is accessible.
 - Please be careful with the use of acronyms and be sure that each acronym is introduced at least once.
 - Consider taking data points out of narrative and creating graphics that will visualize the information.
 - In Chapters 6, 9, 10, 13 and 15 maps would make the narrative more clear and provide the reader the benefit of understanding the locations of information being discussed.
 - The RTP is high-quality, concise and has engaging narrative.
- Chapter 1
 - Page 1 - 2nd to last paragraph - replace the phrase "alternative modes" with "healthy transportation options" or "bicycling, transit and walking" and replace all other references in the document to "alternative modes" with updated terminology
 - Page 5 - 2nd to last paragraph - please also reference the fact that the RTP should set the vision for the region's transportation system.
 - Page 6 - The table is an excellent reflection on the previous plan and is a simple and clear way to communicate to the public the performance of the TPO's goals.
- Chapter 2
 - The public participation chapter should highlight where in the rest of the RTP the reader can learn about what the public input was, especially as it relates to vision, goals, and objectives and then the identification of transportation needs in the region.

- Chapter 3
 - Excellent description of performance based planning that is concise and clear.
 - Goal 2 - Objective B - please spell out the acronyms used.
 - The goals and objectives are very clear and strong.
- Chapter 4
 - Good linkages between demographic characteristics of the region and their influence on transportation. However, what are the impacts of the population projections to 2040 on transportation? Could the loss in population reflect the priority of the RTP to maintain the transportation system, rather than expand it? Such linkages should be drawn to reinforce the investment priorities of the TPO.
- Chapter 5
 - Table 5-5 is an excellent way to communicate pavement management strategies.
- Chapter 15
 - The recommendations are clearly laid out.

Please contact me at (857) 368-8865 or Trey Joseph Wadsworth at (857) 368-8837 if you have any questions.

Sincerely,



David Mohler
Executive Director
Office of Transportation Planning

Cc: Pamela Stephenson, Division Administrator, Federal Highway Administration
Mary Beth Mello, Regional Administrator, Federal Transit Administration
Richard Masse, Acting District 2 Highway Director
Mark Moore, Acting District 1 Highway Director
Steve Woelfel, Director of Strategic Planning
Trey Wadsworth, Manager of MPO Activities

Ben Heckscher Jr.

91 Cronin Hill Rd
Hatfield MA 01038

e-mail: benheckscher@gmail.com

Tel: 413-247-0017

Franklin Regional Council of Governments (FRCOG)
Attn: Ms. Megan Rhodes, Sr. Transportation and Land Use Planner
12 Olive Street – STE 2
Greenfield MA 01301

January 19, 2015

RE: Draft FRCOG 2016 Regional Transportation Plan
Public Comments

Dear Ms. Rhodes,

With this letter I wish to provide the following comments regarding the Draft 2016 Franklin Council of Governments 2016 Regional Transportation Plan.

Chapter 7, Passenger Rail

Page 1 The last line of text on this page says that the improvements will allow freight trains to operate at speeds of 60-70 miles per hour.

My understanding is that the maximum authorized speed for freight trains on the Connecticut River Line has been increased to 40 miles per hour, not 60-70 miles per hour.

Page 2 The second paragraph on this page says, "The Vermonter route is heavily subsidized by the Vermont Agency of Transportation, ..."

I would suggest that this wording be changed to read, "The Vermonter is financed primarily through funds made available by the Vermont Agency of Transportation, the Massachusetts Department of Transportation and the Connecticut Department of Transportation, ..." (this is the exact wording that appears in Amtrak's printed timetable for the Vermonter.)

Page 7 The last paragraph on this page reads, “In the 1980s, the service began with 60 round-trips to Boston each weekday.”

This must be a typo, since ⁶ I cannot imagine, as the wording suggests, that the MBTA once operated 60 trains a day between Gardner and Boston and then discontinued the service. (The Wikipedia page for this station says that in 1983 only 24 passengers a day were using this station.)

Page 9 In the first recommendation I would suggest that the word “expansion” be replaced with the words “introduction of” since this service does not currently exist.

I would also like to ask that you consider a station stop in South Deerfield (near Route 116) as part of any plan to introduce commuter rail service along the Knowledge Corridor.

It is my belief that there is a significant population of potential riders who live between Northampton and Greenfield and Amherst who will not be interested in driving to either Northampton or Greenfield to take a commuter train if such a service is offered.

People who live in South Deerfield, Whatley, and Hatfield will not be willing drive on the already busy streets of Northampton to reach the station at its current location, where there is also limited parking.

People who live across the Connecticut River, in particular in Amherst, will also not drive to Northampton for the same reasons and because of the existing traffic congestion that exists on Route 9 during the rush hours.

South Deerfield is home to The Yankee Candle Company, one of the largest employers in Franklin County. A station stop in South Deerfield would potentially allow for Yankee Candle employees who live near Springfield to use the train to reach their place of employment.

A station located in South Deerfield (or northern Whately) should be placed in close proximity to Route 116. Placing the station close to Route 116 would make it very convenient for people from Amherst and for people along the Route 5 corridor to easily access the station

Thank you for considering my comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben Heckscher", is written over a horizontal line. The signature is stylized with a large, sweeping "B" and "H".

Ben Heckscher

Appendix C Survey

Franklin County Regional Transportation Plan Survey

1. What is your PRIMARY mode of transportation?

- ☐ Car
- ☐ Walk
- ☐ Bike
- ☐ Public Transit Bus
- ☐ Elder / Paratransit service
- ☐ Carpool or Rideshare
- ☐ Other (please specify)

2. Please select all of the ways you travel to different destinations

- ☐ Car
- ☐ Walk
- ☐ Bike
- ☐ Public Transit Bus
- ☐ Elder / Paratransit service
- ☐ Carpool or Rideshare
- ☐ Taxi
- ☐ Peter Pan or Greyhound Bus
- ☐ Amtrak Train
- ☐ Other (please specify)

Franklin County Regional Transportation Plan Survey

3. How far do you typically travel (round trip) on a daily basis?

- ☐ Less than a mile
- ☐ 1 to 10 miles
- ☐ 11 to 20 miles
- ☐ 21 to 30 miles
- ☐ 31 to 40 miles
- ☐ More than 40 miles
- ☐ Other (please specify)

4. Please rate your satisfaction with the following:

	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	No Opinion
Safety of roadways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintenance and condition of roadways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability and frequency of public transit bus services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How safe it is to walk in your community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How safe it is to bike in your community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of information on alternatives to driving alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Franklin County Regional Transportation Plan Survey

5. Please select your transportation concerns for your community and/or the County

	High Concern	Medium Concern	Low Concern	No Opinion
Traffic congestion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Road and bridge conditions and maintenance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bus transit availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of bike lanes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of off-road biking and walking paths	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Long commutes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic speeds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of passenger rail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pollution from transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

Franklin County Regional Transportation Plan Survey

6. Please prioritize the transportation improvements you think are needed in your community and/or the County

	High Priority	Medium Priority	Low Priority	No Opinion
Improve road and bridge conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve road and intersection safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic calming in village centers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase bus transit frequency and extend hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expand bus transit service to new areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve existing sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Add more sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Add more bike lanes/bike facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create or extend off-road biking and walking paths	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create additional park and ride lots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establish commuter rail service between Greenfield and Springfield	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase Amtrak Vermonter service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promote alternative transportation modes (walk, bike, transit, carpool, rideshare)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

7. What community do you live in?

8. Please provide any additional comments or suggestions you have for improving transportation in Franklin County.

Appendix D Demographic Projections

Appendix Table 1: Population Forecasts for Franklin County Towns, 2000 to 2040

Municipality	2000	2010	2020	2030	2040
Ashfield	1,800	1,737	1,595	1,495	1,300
Bernardston	2,155	2,129	2,070	2,090	1,900
Buckland	1,991	1,902	1,782	1,720	1,568
Charlemont	1,358	1,266	1,124	918	691
Colrain	1,813	1,671	1,475	1,330	1,015
Conway	1,809	1,897	1,858	1,840	1,703
Deerfield	4,750	5,125	5,500	5,600	5,889
Erving	1,467	1,800	2,000	2,000	1,890
Gill	1,363	1,500	1,590	1,570	1,500
Greenfield	18,168	17,456	17,200	17,450	17,470
Hawley	336	337	350	300	280
Heath	805	706	580	480	390
Leverett	1,663	1,851	1,969	2,020	2,000
Leyden	772	711	621	560	438
Monroe	93	121	115	100	90
Montague	8,489	8,437	8,470	8,640	8,550
New Salem	929	990	1,058	1,050	975
Northfield	2,951	3,032	2,986	3,020	3,000
Orange	7,518	7,839	8,210	8,043	7,900
Rowe	351	393	380	370	340
Shelburne	2,058	1,893	1,758	1,710	1,564
Shutesbury	1,810	1,771	1,589	1,720	1,750
Sunderland	3,777	3,684	3,544	3,770	3,770
Warwick	750	780	770	740	710
Wendell	986	848	664	570	500
Whately	1,573	1,496	1,445	1,480	1,470
Franklin County Total	71,535	71,372	70,703	70,586	68,653

Source: UMass Donahue Institute Population Projections V2015 pre-release February 10, 2015; RPA inputs to MAPC's development database: December 2014 -February 2015; MAPC's land use allocation model results, March 2015; MassDOT Planning staff calculations, March 2015

Appendix Table 2: Employment Forecasts for Franklin County Towns, 2000 to 2040

Municipality	2000	2010	2020	2030	2040
Ashfield	224	245	238	218	207
Bernardston	466	338	329	300	286
Buckland	516	367	357	326	310
Charlemont	325	405	394	360	342
Colrain	293	191	186	170	161
Conway	169	208	203	185	176
Deerfield	3,867	4,422	4,299	3,922	3,733
Erving	437	276	268	244	232
Gill	184	292	284	258	246
Greenfield	10,499	9,695	9,427	8,599	8,185
Hawley	13	19	19	17	16
Heath	64	64	62	57	54
Leverett	170	195	189	173	165
Leyden	27	65	63	58	55
Monroe	38	18	18	16	15
Montague	2,745	2,819	2,742	2,501	2,381
New Salem	154	147	143	130	125
Northfield	1,173	888	863	787	750
Orange	2,150	1,930	1,877	1,713	1,630
Rowe	128	112	109	100	95
Shelburne	744	744	724	659	628
Shutesbury	141	147	143	130	125
Sunderland	618	862	839	764	728
Warwick	166	66	62	57	54
Wendell	187	147	143	130	125
Whately	2,192	1,020	992	905	861
Franklin County Total	27,688	25,684	24,975	22,781	21,684

Source: UMass Donahue Institute Population Projections V2015 pre-release February 10, 2015; RPA inputs to MAPC's development database: December 2014 -February 2015; MAPC's land use allocation model results, March 2015; MassDOT Planning staff calculations, March 2015.

Appendices



2016 Regional Transportation Plan

Appendix A Public Outreach Efforts

The following is a list of stakeholders that were contacted as part of the public outreach effort in the development of this Regional Transportation Plan.

- All twenty-six Franklin County Town Administrators
- All twenty-six Franklin County Select Boards
- All twenty-six Franklin County Planning Boards
- All twenty-six Franklin County Highway Superintendents
- Greater Franklin County Comprehensive Economic Development Strategy Committee
- Franklin Regional Planning Board
- Franklin Regional Transit Authority
- Greening Greenfield
- Community Action, Inc.
- Franklin County Home Care Corporation
- Franklin County Regional Coordinating Council
- Franklin Land Trust
- Mt. Grace Land Conservation Trust
- Connecticut River Watershed Council
- Baystate Franklin Medical Center
- Franklin County North Quabbin Community Coalition
- Windham Regional Commission (VT)
- Southwest Region Planning Commission (NH)
- New England Central Railroad
- WTE, Ed Wrisley
- All twenty-six Franklin County Council on Aging
- Franklin County Regional Housing Redevelopment Authority
- Massachusetts Rehabilitation Commission
- Stavros
- F.M. Kuzmeskus
- Franklin County Bikeway Committee
- Greenfield Planning Department
- Montague Planning Department
- YMCA
- Greenfield Community College
- Franklin County Energy Committees
- Congressman McGovern
- State Senator Stanley Rosenberg
- State Senator Benjamin Downing
- State Representative Stephen Kulik
- State Representative Paul Mark
- MassDOT Districts 1 and 2
- Franklin County Transportation Planning Organization members
- Massachusetts Department of Conservation and Recreation
- Massachusetts Department of Housing and Community Development
- Massachusetts Department of Environmental Protection

- Massachusetts Executive Office of Energy and Environmental Affairs
- Massachusetts Department of Agriculture
- Massachusetts Historical Commission
- Federal Highway Administration

Summary of Public Input Received for 2015 RTP

The following summary was collected from many public events, they include: Parking Day, 3 public forums, and several stakeholder meetings that FRCOG staff attended. A survey was also distributed and the results are attached here – 52 surveys to date have been collected.

Transit

- Transportation for students included as part of transit trips
- Senior transit needs to be a priority
- There needs to be increased collaboration between FRTA, PVTA, and UMass (this was mentioned multiple times)
- Wendell is interested in bus service. There could be a New Salem-Wendell-Shutesbury-Montague loop. There is a lot of residents in these communities are environmental and energy conscious and would be bus-friendly.
- Need more subsidized funding for transit
- More north-south access to Amherst
- Need weekend bus service
- Need evening service
- There needs to be an organized/structured way of increasing bus ridership (marketing)
- Snow clearing on sidewalks and curb cuts is a huge issue in winter. Major ADA issue.
- The FCHCC would like to expand transit service
- Need more routes and increased frequency
- Need more accessible features
- Need improved bus shelters
- Suzie Hale, Greenfield High School Transition Coordinator:
- More access to Amherst
- Could the bus that stops at GHS come earlier in the afternoon? School is dismissed at 2:10pm, so if bus is running late, students can miss their bus home.

- Transit is HUGE issue for low income households. They need to get to their jobs in order to keep assistance.
- Is transit possible over state lines? Connect Greenfield with Brattleboro and Keene.
- Recommendation – get shift changes of big companies to see how to coordinate transit routes. Judd Wire is interested in getting transit service (near future potential industrial site).
- Need more routes in West County
- GCC bus only route
- Saturday bus service to Orange
- Make the bus schedule more visual in places like downtown and easier to use

Roadway/Bridges

- There are a lot of local bridges that were mostly replaced after 1938 storm. They are past their lifetimes and need to be replaced. Colrain has 46 of these bridges. How will these repairs be paid for?! A closed bridge is an emergency issue due to very long detours (can be 20+miles). Local bridges need to be a priority.
- Funding for bridges will be incredibly important
- Colrain-Heath bridge is out resulting in huge detours down a single narrow lane road, which is very steep and especially dangerous in winter.
- Issues with Gill-Montague Bridge
 - Way too many lights. Is there a waiver process for lighting standards?
 - Sidewalks are not shoveled and cleared in winter
 - The grates on the roadway are perpendicular to roadway, is unsafe for bicyclists
- The General Pierce Bridge needs to be improved

Sustainability/Livability

- Does model Complete Streets policies mention winter clearing policies for sidewalks?
- Ridesharing could be a cheap way to get transportation for low income households.
- Can we connect MassRIDES with temp agencies to work on increasing ridesharing
- There is interest in car-sharing (Zip Car), but difficult to attract companies to rural areas. Could an aggregation model be sued to attract these services
- Improve infrastructure to support electric vehicles. Recommendation to create a map of tri-state EV charging stations – where are there gaps
- More electric plug in sites

Economic Development

- The potential Olympics is an opportunity for transit and economic development here
- Focus on economic development – help current residents in town rather than long term rail projects
- Still need to work on internet/broadband issues
- There needs to be a consideration of development pressures and reexamination of build-out studies. Look at RPSD's target growth areas.
- Easier to do transportation planning (particularly for transit) if towns commit to village center densities
- Cost of parking in Greenfield is a barrier to transit and jobs. Too expensive to park at JWO for low income to use the bus.
- Parking in Greenfield too expensive – don't want to shop there anymore (4 comments on this)

Safety

- Rt. 47/63 intersection has a sightline safety issue (need to lower the profile)
- General safety – fog lines should be bright and clear.
- Improved safety on Turners Falls Road

Bicycle/Pedestrian

- GCC roundabout does not include improvements for bicyclists (granite curbs are not bike friendly)
- Walking along rural roads is difficult, not because of lack of sidewalks, but because of presence of poison ivy and knotweed. Warwick was told that they would need a Vegetation Management Plan in order to spray or treat weeds. But creating these plans is too difficult for a small town to do.
 - Knotweed and other invasives are affecting safety sightlines (ex. Wendell/Leverett (North Leverett Rd).
- Sunderland would like on-road bike lanes to connect communities and cross county lines
- Greenfield Main Street should be restriped to make bike friendly – get rid of angle parking.
- Improved ped/bike connections between Turners Falls and Greenfield
- Improved safety on Turners Falls Road! (bike lane possible?)
- More bike paths everywhere, but especially connecting Unity Park to downtown Greenfield
- More bicycle-friendly roadways

Passenger Rail

- Continue advocating for Greenfield to Boston route (not settling for Boston to Springfield route) and include stop in Amherst.
- Need to publish information on Amtrak train schedules and ticket purchasing
- There are a large number of employees (esp. non-profit) in FC that have to commute to Boston for work on weekly/monthly basis. This is very expensive – is there a way to commute cheaper? Rail, telecommute options? Get # of employees in FC that commute like this to make case for commuter rail.
- There needs to be improved long term parking for Amtrak. Better marked, easier to understand and use.
- Greenfield has been told they can get directional signs for Amtrak station. They need to do so and install them.

Results from Votes at Meetings

Vote 1: If you had to decide an overall strategy for improving transportation in Franklin County, how would you rank the following items?

- 1) Make communities more walkable and bike friendly
- 2) Improve or expand public transportation
- 3) Protect the environment*
- 3) Expand rail service *
- 4) Reduce crashes
- 5) Build new or repair roadways

*There are 2 items tied for #3 in priority

Vote 2: Rate your satisfaction with the following items. (numbers shown are the total count from participants)

	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	No Opinion
Safety of roadways		3	1		
Maintenance of condition of roadways		4			
Availability and/or frequency of public transit			1	4	
Safety of walking in community		3	1		
Safety of bicycling in community		2	2		
Awareness of alternatives to driving alone	1	1	2	1	

Results from Parking Day Voting regarding the ranking of regional transportation priorities:

- 1) Walking (48 votes)
- 2) Bicycling (42 votes)
- 3) Passenger rail (40)
- 4) Transit (27)
- 5) Safety (22)
- 6) Roads (9)
- 7) Bridges (7)
- 8) Tourism (7)

Appendix B Public Comments

Once the FRCOG staff had completed a draft of the 2015 Regional Transportation Plan, public input was sought from a variety of stakeholders, as well as those required by MAP-21, during a 30-day public review and comment period between June 25, 2015 and July 24, 2015. Two public meetings were held on July 15, 2015 – one at 11:30 AM and the second at 5:30 PM – to directly obtain public input regarding the draft RTP. Both meetings were held at the centralized and accessible location of the John W. Olver Transit Center in Greenfield.

As part of this outreach, the FRCOG received comments on the draft RTP. Those comments that were received were reviewed and incorporated, as appropriate, into the RTP. The following are the comments received during the public comment period.

Comments Received during the Final Public Meetings

- The Town of Greenfield needs to commit to an overnight parking plan for passenger rail users and clearly advertise it.
- The fixed transit route Rt. 23 is not viable as it stands now. The \$3 fare is too expensive and is a hindrance to ridership. This route should be a priority.
- Two existing bus riders would strongly support Saturday service.
- How does the quality of roadway pavement get determined during construction projects? The quality can greatly affect bicyclists.
- There needs to be a focus on making Route 5/10 safer for bicyclists. Related to this, there should be an off-road bike link in north Deerfield connecting to Historic Deerfield.
- There should be a regional policy or push for clearing snow from sidewalks and curb cuts.

Comments Received during the Public Comment Period

From: Walter Ramsey - Montague Planner [<mailto:planner@montague-ma.gov>]

Sent: Monday, June 29, 2015 1:04 PM

To: Megan Rhodes

Subject: Draft Transportation Plan- Comments

Hello Megan,

Good job with the plan. Here are my comments:

Montague City Rd Complete Streets Project is now scheduled for construction in 2016 (not 2015). Bid opening is Sep 2015

Hatchery Rd/ Greenfield Rd ped bridge is now scheduled for construction in 2016 (not 2015). Bids were opened 6/9

It would be ideal if the regional plan could reflect some of the recommended projects in the 2013 Downtown Turners Falls Livability Plan that I am working on. Any mention helps me with grants and building support.

Livability Plan Recommendations:

5th street gateway improvements. A primary entrance into Turners Falls from Greenfield via the White Bridge is a complicated intersection bisected by the Canalside Trail .The intersection also accommodates pedestrian flow from Paperlogic employees. The Livability Plan developed a concept intersection improvement. The next step would be a complete streets analysis. Located within a Slum and Blight Designation Area.

Public parking on Canal and 3rd Street. The Town plans to develop a 30 space public parking lot a former Brownfield site at the corners of 3rd and Canal Street. Located within a Slum and Blight Designation Area. Will alleviate demand generated by new economic and residential activity on 3rd Street and will support future reuse of the historic mill district. Town has completed a conceptual design for the municipally-owned site. Likely funding source is CDBG

Rehabilitate Avenue A Streetscape. The Town is currently undergoing a \$396,000 phase I streetscape improvement recommended in the Livability Plan (construction to begin in July). This phase includes replacing pedestrian streetlights on Avenue A and developing a landscaped pedestrian micro plaza in the center of downtown. The plaza will make ped crossing safer, accommodate bike parking, and accommodate ADA accessibility. Funded by CDBG. Future phases include extending pedestrian streetlights from 5th Street to 7th Street and repairing planter boxes installed in the 1980's. Additionally, The Town is working with FRTA to make bus stop improvements for the downtown stops.

Happy to provide further info about these transportation related projects.

Walter Ramsey, AICP
Town Planner and Conservation Agent
Town of Montague
One Avenue A Turners Falls, MA 01376
413.863.3200 ext.112

From: jeff singleton singleton.jeff47@gmail.com
To: Maureen Mullaney <MMullaney@frcog.org>; Megan Rhodes MRhodes@frcog.org
Subject: Energy Committee Statement

Hi Maureen and Megan:

The Montague Energy Committee discussed both the FRCOG regional transportation plan and the FRTA Comprehensive service analysis. Obviously there was a lot to discuss and - given the fact that there were a number of other important items on the agenda - we could unfortunately only touch on some of the key issues that have been of on-going concern to the MEC and Montague.

One of these obviously is the status of Route 23. The committee endorsed both the FRCOG and FRTA-CSA proposal related to "the expansion of Route 23 and highly recommends that a viable route to UMass Amherst, the largest employer in the region, be made a key regional transportation goal." The resolution also said that "We would like to see more emphasis on increasing public transportation use by those with automobiles who seek to reduce dependence on fossil fuels."

As I said both of these points are consistent with positions the MEC and the Montague Selectboard have taken over the past year. See attached.

Thanks. In general the FRCOG plan looks very comprehensive, both practical and visionary which is an impressive mix. I hope the focus on these concerns is not seen as taking away from that.

All the Massachusetts MPOs and MassDOT continue to meet the requirements of air quality conformity according to the Code of Federal Regulations, and as evaluated through inter-agency consultation. Specifically:

On March 6, 2015, (80 FR 12264, effective April 6, 2015) EPA published the Final Rulemaking, “Implementation of the 2008 National Ambient Air Quality Standards (NAAQS) for Ozone: State Implementation Plan Requirements; Final Rule.” This rulemaking removed transportation conformity to the 1997 Ozone NAAQS (the standard referenced by CLF and the subject of a 12/23/14 DC Circuit Court decision).

Link to Final EPA Rulemaking: <http://www.gpo.gov/fdsys/pkg/FR-2015-03-06/pdf/2015-04012.pdf>

Since the RTPs have been developed, reviewed, and will be approved after April 6, 2015, air quality conformity determinations to the 1997 Ozone NAAQS are no longer required, as those standards and all associated area designations have been permanently replaced by the 2008 NAAQS, which (with actually a stricter level of allowable ozone concentration than the 1997 standards) no longer designate Massachusetts as a non-attainment area(s) for ozone (except for Dukes County – see below).

Through the Interagency air quality consultation process (involving U.S. DOT, EPA, MassDEP, MassDOT, and the MPOs) the latest EPA rulemakings, the referenced court decision, ozone standards and area designations were all reviewed. Specific transportation conformity requirements in Massachusetts for this RTP round are as follows:

- No conformity determination is required for the 2008 Ozone NAAQS, as Dukes County (the only designated non-attainment area) is classified as an “isolated rural nonattainment area” and therefore only needs to evaluate transportation conformity when the Martha Vineyard Commission has a “regionally significant” project that would trigger conformity.
- The Boston carbon monoxide attainment area with a current maintenance plan in place (with a carbon monoxide motor vehicle emission budget) will prepare a carbon monoxide air quality analysis for the Boston Area (nine communities).
- The Lowell, Waltham, Worcester and Springfield Areas are classified attainment with a limited maintenance plan in place. No regional air quality analysis is required in limited maintenance plan areas as emissions may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that such areas will experience so much growth in that period that a violation of the carbon monoxide NAAQS would result. Therefore, in areas with approved limited maintenance plans, Federal actions requiring conformity determinations under the transportation conformity rule are considered to satisfy the “budget test.” All other transportation conformity requirements under 40 CFR 93.109(b) continue to apply in limited maintenance areas, including project level conformity determinations based on carbon monoxide hot spot analyses under 40 CFR 93.116.

In consideration of the comments received, combined with MassDOT's greenhouse gas (GHG) reporting requirements for the Commonwealth's Global Warming Solutions Act (310 CMR 60.05), MassDOT will conduct a "conformity-related" emissions analysis for ozone precursors, consistent with the 1997 NAAQS standards (currently superseded by the 2008 NAAQS). This emissions analysis will be for informational purposes only (as it is currently NOT federally required), and will be contained in a separate air quality document (also to include GHG emissions analysis) that will be completed at the end of August 2015 – the results of which will then be available to the MPOs, the Massachusetts Executive Office of Energy and Environmental Affairs (and affiliate agencies), and all other interested parties.



Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO



July 22, 2015

Linda Dunlavy, Executive Director
Franklin Regional Council of Governments
12 Olive Street Suite 2
Greenfield, MA 01301

Dear Ms. Dunlavy:

The Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning (OTP) has reviewed the draft 2016 Regional Transportation Plan (RTP) released by the Franklin Transportation Planning Organization (TPO) on June 23, 2015. The Franklin Regional Council of Governments staff is commended for providing a concise and thorough document with data supporting a clear vision for long term infrastructure investments and improvements throughout the region.

The following MassDOT comments include both general guidance and specific comments on the MPO's 3C planning process with regard to the content of this document as released for public review.

- Overall
 - Please ensure that the document is accessible.
 - Please be careful with the use of acronyms and be sure that each acronym is introduced at least once.
 - Consider taking data points out of narrative and creating graphics that will visualize the information.
 - In Chapters 6, 9, 10, 13 and 15 maps would make the narrative more clear and provide the reader the benefit of understanding the locations of information being discussed.
 - The RTP is high-quality, concise and has engaging narrative.
- Chapter 1
 - Page 1 - 2nd to last paragraph - replace the phrase "alternative modes" with "healthy transportation options" or "bicycling, transit and walking" and replace all other references in the document to "alternative modes" with updated terminology
 - Page 5 - 2nd to last paragraph - please also reference the fact that the RTP should set the vision for the region's transportation system.
 - Page 6 - The table is an excellent reflection on the previous plan and is a simple and clear way to communicate to the public the performance of the TPO's goals.
- Chapter 2
 - The public participation chapter should highlight where in the rest of the RTP the reader can learn about what the public input was, especially as it relates to vision, goals, and objectives and then the identification of transportation needs in the region.

- Chapter 3
 - Excellent description of performance based planning that is concise and clear.
 - Goal 2 - Objective B - please spell out the acronyms used.
 - The goals and objectives are very clear and strong.
- Chapter 4
 - Good linkages between demographic characteristics of the region and their influence on transportation. However, what are the impacts of the population projections to 2040 on transportation? Could the loss in population reflect the priority of the RTP to maintain the transportation system, rather than expand it? Such linkages should be drawn to reinforce the investment priorities of the TPO.
- Chapter 5
 - Table 5-5 is an excellent way to communicate pavement management strategies.
- Chapter 15
 - The recommendations are clearly laid out.

Please contact me at (857) 368-8865 or Trey Joseph Wadsworth at (857) 368-8837 if you have any questions.

Sincerely,



David Mohler
Executive Director
Office of Transportation Planning

Cc: Pamela Stephenson, Division Administrator, Federal Highway Administration
Mary Beth Mello, Regional Administrator, Federal Transit Administration
Richard Masse, Acting District 2 Highway Director
Mark Moore, Acting District 1 Highway Director
Steve Woelfel, Director of Strategic Planning
Trey Wadsworth, Manager of MPO Activities

Ben Heckscher Jr.

91 Cronin Hill Rd
Hatfield MA 01038

e-mail: benheckscher@gmail.com

Tel: 413-247-0017

Franklin Regional Council of Governments (FRCOG)
Attn: Ms. Megan Rhodes, Sr. Transportation and Land Use Planner
12 Olive Street – STE 2
Greenfield MA 01301

January 19, 2015

RE: Draft FRCOG 2016 Regional Transportation Plan
Public Comments

Dear Ms. Rhodes,

With this letter I wish to provide the following comments regarding the Draft 2016 Franklin Council of Governments 2016 Regional Transportation Plan.

Chapter 7, Passenger Rail

Page 1 The last line of text on this page says that the improvements will allow freight trains to operate at speeds of 60-70 miles per hour.

My understanding is that the maximum authorized speed for freight trains on the Connecticut River Line has been increased to 40 miles per hour, not 60-70 miles per hour.

Page 2 The second paragraph on this page says, "The Vermonter route is heavily subsidized by the Vermont Agency of Transportation, ..."

I would suggest that this wording be changed to read, "The Vermonter is financed primarily through funds made available by the Vermont Agency of Transportation, the Massachusetts Department of Transportation and the Connecticut Department of Transportation, ..." (this is the exact wording that appears in Amtrak's printed timetable for the Vermonter.)

Page 7 The last paragraph on this page reads, “In the 1980s, the service began with 60 round-trips to Boston each weekday.”

This must be a typo, since ⁶ I cannot imagine, as the wording suggests, that the MBTA once operated 60 trains a day between Gardner and Boston and then discontinued the service. (The Wikipedia page for this station says that in 1983 only 24 passengers a day were using this station.)

Page 9 In the first recommendation I would suggest that the word “expansion” be replaced with the words “introduction of” since this service does not currently exist.

I would also like to ask that you consider a station stop in South Deerfield (near Route 116) as part of any plan to introduce commuter rail service along the Knowledge Corridor.

It is my belief that there is a significant population of potential riders who live between Northampton and Greenfield and Amherst who will not be interested in driving to either Northampton or Greenfield to take a commuter train if such a service is offered.

People who live in South Deerfield, Whatley, and Hatfield will not be willing drive on the already busy streets of Northampton to reach the station at its current location, where there is also limited parking.

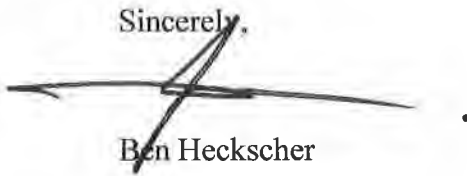
People who live across the Connecticut River, in particular in Amherst, will also not drive to Northampton for the same reasons and because of the existing traffic congestion that exists on Route 9 during the rush hours.

South Deerfield is home to The Yankee Candle Company, one of the largest employers in Franklin County. A station stop in South Deerfield would potentially allow for Yankee Candle employees who live near Springfield to use the train to reach their place of employment.

A station located in South Deerfield (or northern Whately) should be placed in close proximity to Route 116. Placing the station close to Route 116 would make it very convenient for people from Amherst and for people along the Route 5 corridor to easily access the station

Thank you for considering my comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben Heckscher", is written over a horizontal line. The signature is stylized with a large, sweeping "B" and "H".

Ben Heckscher

Appendix C Survey

Franklin County Regional Transportation Plan Survey

1. What is your PRIMARY mode of transportation?

- ☐ Car
- ☐ Walk
- ☐ Bike
- ☐ Public Transit Bus
- ☐ Elder / Paratransit service
- ☐ Carpool or Rideshare
- ☐ Other (please specify)

2. Please select all of the ways you travel to different destinations

- ☐ Car
- ☐ Walk
- ☐ Bike
- ☐ Public Transit Bus
- ☐ Elder / Paratransit service
- ☐ Carpool or Rideshare
- ☐ Taxi
- ☐ Peter Pan or Greyhound Bus
- ☐ Amtrak Train
- ☐ Other (please specify)

Franklin County Regional Transportation Plan Survey

3. How far do you typically travel (round trip) on a daily basis?

- ☐ Less than a mile
- ☐ 1 to 10 miles
- ☐ 11 to 20 miles
- ☐ 21 to 30 miles
- ☐ 31 to 40 miles
- ☐ More than 40 miles
- ☐ Other (please specify)

4. Please rate your satisfaction with the following:

	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	No Opinion
Safety of roadways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintenance and condition of roadways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability and frequency of public transit bus services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How safe it is to walk in your community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How safe it is to bike in your community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of information on alternatives to driving alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Franklin County Regional Transportation Plan Survey

5. Please select your transportation concerns for your community and/or the County

	High Concern	Medium Concern	Low Concern	No Opinion
Traffic congestion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Road and bridge conditions and maintenance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bus transit availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of bike lanes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of off-road biking and walking paths	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Long commutes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic speeds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of passenger rail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pollution from transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

Franklin County Regional Transportation Plan Survey

6. Please prioritize the transportation improvements you think are needed in your community and/or the County

	High Priority	Medium Priority	Low Priority	No Opinion
Improve road and bridge conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve road and intersection safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic calming in village centers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase bus transit frequency and extend hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expand bus transit service to new areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve existing sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Add more sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Add more bike lanes/bike facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create or extend off-road biking and walking paths	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create additional park and ride lots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establish commuter rail service between Greenfield and Springfield	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase Amtrak Vermonter service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promote alternative transportation modes (walk, bike, transit, carpool, rideshare)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

7. What community do you live in?

8. Please provide any additional comments or suggestions you have for improving transportation in Franklin County.

Appendix D Demographic Projections

Appendix Table 1: Population Forecasts for Franklin County Towns, 2000 to 2040

Municipality	2000	2010	2020	2030	2040
Ashfield	1,800	1,737	1,595	1,495	1,300
Bernardston	2,155	2,129	2,070	2,090	1,900
Buckland	1,991	1,902	1,782	1,720	1,568
Charlemont	1,358	1,266	1,124	918	691
Colrain	1,813	1,671	1,475	1,330	1,015
Conway	1,809	1,897	1,858	1,840	1,703
Deerfield	4,750	5,125	5,500	5,600	5,889
Erving	1,467	1,800	2,000	2,000	1,890
Gill	1,363	1,500	1,590	1,570	1,500
Greenfield	18,168	17,456	17,200	17,450	17,470
Hawley	336	337	350	300	280
Heath	805	706	580	480	390
Leverett	1,663	1,851	1,969	2,020	2,000
Leyden	772	711	621	560	438
Monroe	93	121	115	100	90
Montague	8,489	8,437	8,470	8,640	8,550
New Salem	929	990	1,058	1,050	975
Northfield	2,951	3,032	2,986	3,020	3,000
Orange	7,518	7,839	8,210	8,043	7,900
Rowe	351	393	380	370	340
Shelburne	2,058	1,893	1,758	1,710	1,564
Shutesbury	1,810	1,771	1,589	1,720	1,750
Sunderland	3,777	3,684	3,544	3,770	3,770
Warwick	750	780	770	740	710
Wendell	986	848	664	570	500
Whately	1,573	1,496	1,445	1,480	1,470
Franklin County Total	71,535	71,372	70,703	70,586	68,653

Source: UMass Donahue Institute Population Projections V2015 pre-release February 10, 2015; RPA inputs to MAPC's development database: December 2014 -February 2015; MAPC's land use allocation model results, March 2015; MassDOT Planning staff calculations, March 2015

Appendix Table 2: Employment Forecasts for Franklin County Towns, 2000 to 2040

Municipality	2000	2010	2020	2030	2040
Ashfield	224	245	238	218	207
Bernardston	466	338	329	300	286
Buckland	516	367	357	326	310
Charlemont	325	405	394	360	342
Colrain	293	191	186	170	161
Conway	169	208	203	185	176
Deerfield	3,867	4,422	4,299	3,922	3,733
Erving	437	276	268	244	232
Gill	184	292	284	258	246
Greenfield	10,499	9,695	9,427	8,599	8,185
Hawley	13	19	19	17	16
Heath	64	64	62	57	54
Leverett	170	195	189	173	165
Leyden	27	65	63	58	55
Monroe	38	18	18	16	15
Montague	2,745	2,819	2,742	2,501	2,381
New Salem	154	147	143	130	125
Northfield	1,173	888	863	787	750
Orange	2,150	1,930	1,877	1,713	1,630
Rowe	128	112	109	100	95
Shelburne	744	744	724	659	628
Shutesbury	141	147	143	130	125
Sunderland	618	862	839	764	728
Warwick	166	66	62	57	54
Wendell	187	147	143	130	125
Whately	2,192	1,020	992	905	861
Franklin County Total	27,688	25,684	24,975	22,781	21,684

Source: UMass Donahue Institute Population Projections V2015 pre-release February 10, 2015; RPA inputs to MAPC's development database: December 2014 -February 2015; MAPC's land use allocation model results, March 2015; MassDOT Planning staff calculations, March 2015.